To Mrs H. H. Beach with kind remembrances from

M. Steinert

THE

M. STEINERT COLLECTION

OF

KEYED AND STRINGED INSTRUMENTS.

WITH VARIOUS TREATISES ON THE HISTORY OF THESE INSTRUMENTS, THE METHOD OF PLAYING THEM, AND THEIR INFLUENCE ON MUSICAL ART.

BY

MORRIS STEINERT,

NEW HAVEN, CONN.

ILLUSTRATED.

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DEDICATED TO MY FRIEND

A. J. HIPKINS, F.S.A.,

OF LONDON, ENGLAND,

AS A MARK OF APPRECIATION.

PREFACE.

THE articles in this pamphlet have been written for a twofold purpose. First. In order to serve as a catalogue to the visitor of the Exhibition, to fully explain to him the nature and construction of the different instruments of my collection and to serve as a book for future reference. My experience at Vienna, where I exhibited a part of this collection in 1892, has taught me that students of music in order to fully understand these instruments, should be provided with some work of guidance, explanation and instruction. In this little volume I have endeavored to fully meet this demand.

Second. In order to teach the student the polyphonic nature of the music of the great masters of the eighteenth century, as played on the instruments of that period, to remind him that the music of Bach and his contemporaries was written for the instruments of that period solely, and that their innate beauty can only be fully comprehended if rendered on them, although the music of Bach has been resuscitated by Mendelssohn and others, the instruments for which it was intended had been lost sight of. For this reason I have made it one of my dearest tasks to collect and fully repair these instruments and learn the original method of playing them, in order to reproduce these works strictly in conformity with the composer's intention.

In my researches I have been greatly assisted by my friend, A. J. HIPKINS, F. S. A., of London. His various works on the history and construction of musical instruments have been of immense value to me, and have furnished me with many an item for this little work which, as a mark of appreciation, I dedicate to him.

MORRIS STEINERT.

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CATALOGUE

OF THE

M. STEINERT COLLECTION

OF

KEYED AND STRINGED INSTRUMENTS

EXHIBITED AS A LOAN COLLECTION AT THE

WORLD'S COLUMBIAN EXPOSITION

BY ITS PROPRIETOR

MORRIS STEINERT,

NEW HAVEN, CONN., U. S. A.

THE SAME COLLECTION AS SHOWN AT THE

INTERNATIONAL EXPOSITION FOR MUSIC AND THEATRE,

VIENNA, 1892.

INTRODUCTION.

THIS CATALOGUE describes my collection of Keyed and Stringed Instruments at the Exhibition at Chicago. To fully understand their construction, and the art of playing on them, it is necessary to resort to books treating on these subjects. Such a one I have prepared and submit it to the music-loving public.

A visitor glancing at these instruments may at first view consider them as antiquities, such as are met with in Art Museums. Herein he commits an error. It is true that while engaged in my task as collector I discovered them in a dilapidated condition, and unfit to be played on. In that state they did not exhibit their former usefulness, and no one beholding them could surmise that they served the musicians of the past centuries as musical instruments, for which the great masters of that period composed their divine works, and that they were of sufficient capacity to transport the performer to the most exalted realms of inspiration.

I have succeeded in repairing these instruments, so that now, after centuries of quiet rest, they appear in their original living state. In this I was actuated by the desire that these instruments should serve as a medium for performing on them the compositions of Bach and his contemporaries, so as to enable the student of music to hear these masterly works in their original garb.

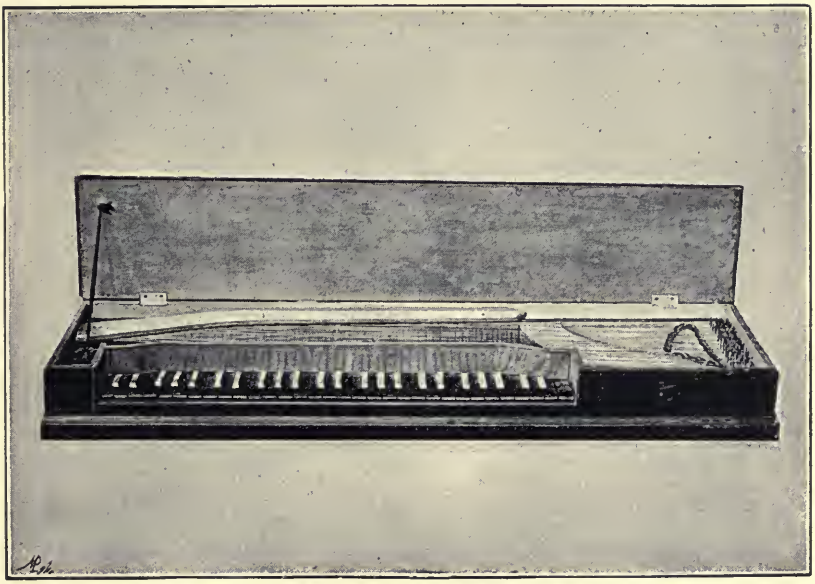
For this purpose I present these classical instruments to the public, and hope that doing this I may render some service to our present generation.

M. STEINERT.

NEW HAVEN, June 19, 1893.

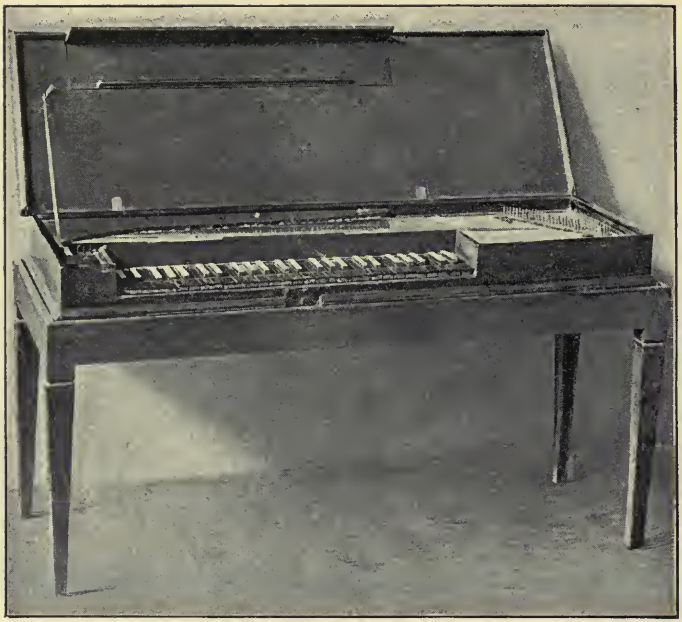
M. STEINERT.

CLAVICHORDS.



No. 1.—Clavichord, 4½ octaves. "Gebunden."

Of the 15th century. In this instrument a small bit of brass called a "tangent" is fastened to the back end of the key, and when raised by pressing the key, both strikes the string and divides it, thus producing at the same time tone and pitch. An excellent method to obtain variety in force and quality of tone. This instrument has more keys than strings, and three different tones are produced upon each set of strings; a system which is called in German "gebunden," and in English fretted.



No. 2.—Clavichord, 4½ octaves. "Gebunden."

Of the 16th century. In this instrument two different tones are produced upon each set of strings.

No. 3.—Clavichord, 4½ octaves. "Gebunden." Case in rococo style.

In white enamel and gold, latter part of the 17th century. In this instrument also two different tones are produced upon each set of strings.

No. 4*a*.—Clavichord, 4 octaves. "Gebunden." Mahogany naturals and black sharps.

The case is in black enamel with gold, and rests upon a frame. Two different tones are produced upon each set of strings.

No. *4b.*—Clavichord, 5⅛ octaves. "Ungebunden,"

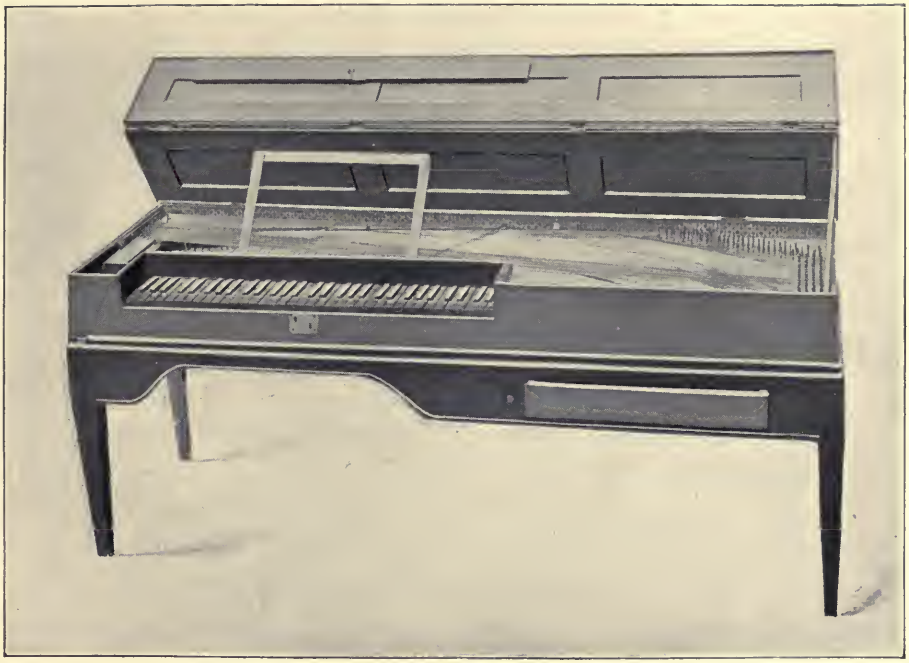
Made by Schiedmäyer in Neustadt an der Aisch, 1789. Has black naturals and white sharps.

Here each tangent has its own set of strings, a system which is called "ungebunden," or unfretted. This invention was made by Daniel Faber, in Crailsheim, Germany, 1725.

No. 5.—Clavichord, 5¼ octaves. "Ungebunden."

Made by Michael Voit & Son, in Schweinfurt, Bavaria, Germany.

No. 6. Clavichord, 5¼ octaves, "ungebunden," made by Michael Voit & Son, in Schweinfurt, Bavaria, Germany.



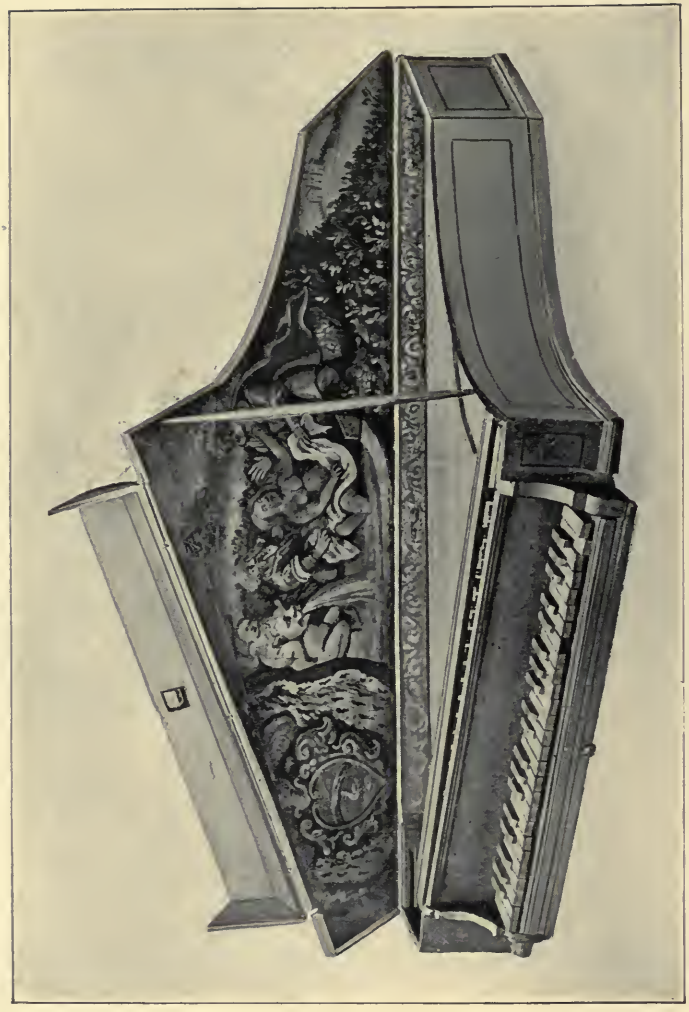
No. 7.—Clavichord, 5½ octaves. "Ungebunden."

The maker's name unknown, although certain peculiarities indicate that it is the product of Gottfried Silbermann (born 1683, died 1753).

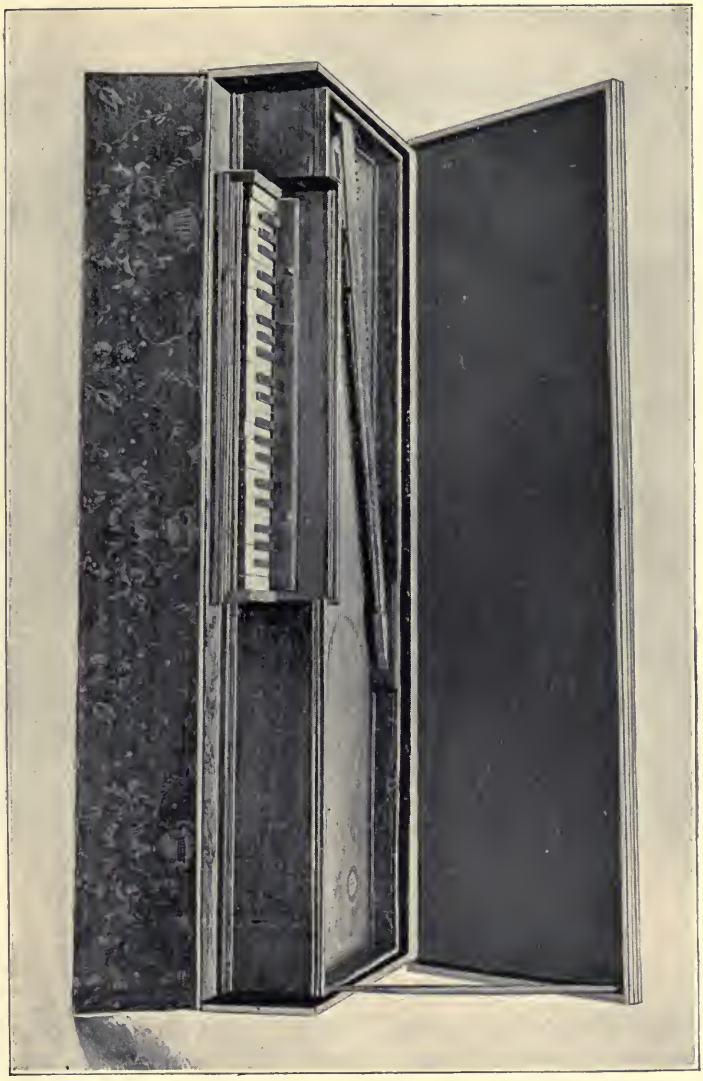
SPINETS.

No. 8. Italian Spinet, 3½ octaves, from the middle of the 15th century.

The spinet is a keyed instrument, with "plectra" or jacks, which was probably invented during the 14th century, and continued in use until the 18th century. It was the favorite instrument of Queen Elizabeth. It has one string to each note, which is plucked by a crow-quill fastened to a jack resting upon the key, which sets the string in vibration when the key is pressed down.



No. 9.—Italian Spinet, 3½ octaves. From the middle of the 15th century.



No. 10.—Italian Spinet, 3½ octaves. From the middle of the 15th century.

No. 11. Italian Spinet, 3½ octaves, from the middle of the 15th century.

No. 12.—Double Spinet. 4 octaves. With paintings.

Made by the amous Hans Ruckers the elder, ot Antwerp.

The Ruckers made spinets as early as 1579, and their instruments were noted as being of the finest quality. The little spinet at the left, which sets into the spinet proper, is tuned one octave higher than the one whose keyboard is placed to the right. In performing upon both instruments at the same time, the smaller instrument is removed and can be set upon a table. The maker,

as is proved by his initials H. R. and his device in the rose of the sound-hole, is no other than the famous Hans Ruckers the elder, of Antwerp, and on the jack rails of both spinets may be read

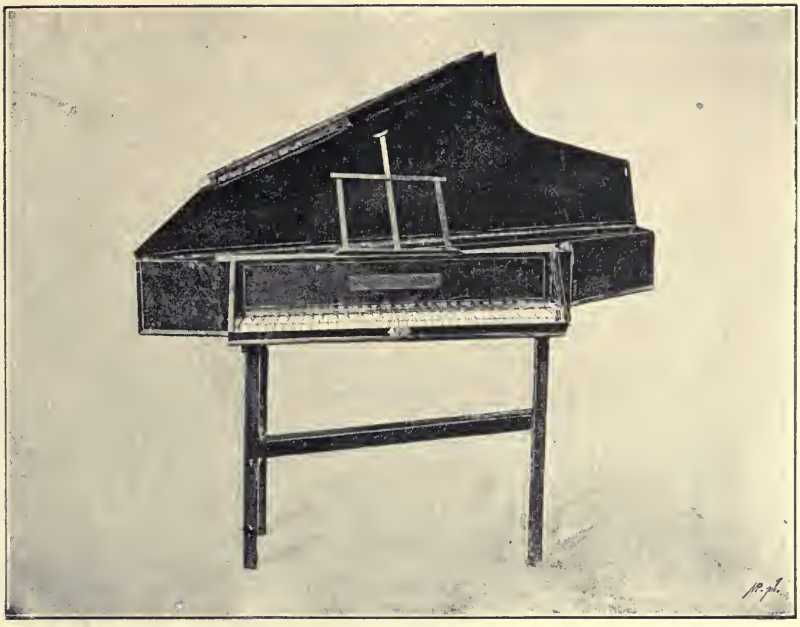
"Johannes Rvqvers me fecit."

The paintings upon the lid represent a contest before the gods between Apollo and Marsyus, the former divinity playing a viol and the latter a pipe. The background is a hilly country, with a lake and a castle, and a man in a boat. Above and below the removable spinet are painted landscapes, with figures immediately above it, children dancing, and at the fixed keyboard men and women dancing in pairs. The instrument rests upon a stand with seven pierced arches and columns. With the exception of one at Nuremberg, made in 1580 by Martin Beest, it is doubtful whether many other double spinets are still in existence.

No. 13.—Spinet, 3¾ octaves.

Made by Andreas Ruckers, Antwerp, 1620.

Andreas was the son of Hans the elder, and was equally celebrated as a spinet and harpsichord maker. Handel's favorite harpsichord, which he used, and is now at the South Kensington Museum in London, was built by Andreas Ruckers in 1641. On the inside jack rail is the name of "Andreas × Rvckers me fecit Antverpia," and on the rosette his initials "A. R." and King David playing on the harp. On the inside lid, "Sic transit gloria Mvndi."



No. 14.—Spinet, 5 octaves.

Made by Johannes Hitchcock, London, about 1750. Johannes and Thomas Hitchcock were the most celebrated spinet makers in England.

No. 15. Spinet, 5 octaves, made by Thomas Hitchcock, London, about 1750. It is to be presumed that Thomas and Johannes Hitchcock were brothers, but worked separately and followed different schools.

No. 16. Spinet, 5 octaves, made by Thomas Barton, London, 1730. Inscribed, "Thomas Barton, MDCCXXX."

No. 17. Spinet, 5 octaves, made by William Pether, London, about 1725, having the following inscription on the name-board: "Sofficitae jucunda oblivio vitae," which motto reads in English as follows: "The pleasant oblivion of long life." The upper keys made of ivory and ebony. This instrument is on exhibition in the Connecticut Building.

HARPSICHORDS.

No. 18. Harpsichord, 4⅓ octaves.

Made by a Florentine at Pisa, 1626.

This harpsichord, which sets in a separate case, from which it can be withdrawn, is according to the style of the Italian school of the 16th century. It has three registers on the right (outside) of the instrument, two strings of eight-foot, tuned in unison, and one shorter string of four-foot tone. The natural keys are made

of boxwood and the sharps of ebony. The case is highly decorated with paintings, representing figures and flowers, both inside and outside. This highly interesting instrument is probably one of the oldest yet in existence.

No. 19.—Harpsichord, 4 octaves, 3 registers.

Made by Johannes Couchet, Antwerp, 1679; with painting by Van Kessell.

This instrument has three registers, of which two are of eight-foot and one of four-foot tone. It rests upon a frame, and the case and sounding-board contain a most beautiful painting by the celebrated Dutch painter Van Kessell. Couchet is considered one of the most celebrated harpsichord makers of the Netherland school, was a grandson of the celebrated Hans Ruckers the elder, and a nephew and apprentice of Hans Ruckers the younger.

No. 20*a*. Harpsichord, with two keyboards, 5 octaves.

Built by J. A. Hass, Hamburg, 1710.

This instrument has two keyboards, with tortoise-shell naturals and ivory sharps; also eight stops, similar to an organ. This is probably the largest harpsichord in existence, both as to dimensions and musical capacity. It contains a long set of strings, producing a sixteen-foot tone, also two shorter sets, each set

producing an eight-foot tone, and a still shorter one of a four-foot tone, and finally two very short sets, each giving a two-foot tone. Furthermore, one stop imitating the lute and another one the harp. On account of the extraordinary size of such an instrument, and in view of the diminutive size of instruments of that period, it was deemed expedient to supply this harpsichord with eight strong legs. The sounding board is painted with flowers and other artistic decorations. But especially it is the rich paintings on the inside lid which display the most excellent specimens of Japanese art, both in conception and in execution. The outer case and legs are decorated in imitation of tortoise-shell. The builder of this instrument was noted as the most celebrated harpsichord maker of that period in Germany. Whatever must have influenced the builder to produce a keyed instrument which was capable of reproducing the prominent elements inherent in the organ, it is to be presumed that certain influences emanating from great musicians must have operated upon him; and when we consider that Hamburg and its vicinity was the home of the greatest musicians, such as Buxtehude, Reinken, Händel, Bach, Hasse and Mattheson, it is to be deplored that this unique instrument is silent as to its past history, which, no doubt, would excite our admiration, could we know who were the musicians who have used it. Bach's Concerto in the Italian style and his French ouverture were composed for a harpsichord with two manuals. Its original title reads as follows:

"Zweiter Theil der Clavier-Uebung, bestehend in einem concerto nach italienischer Gusto und einer Ouverture nach französischer Arth, vor ein Clavicymbel (mit zwei manualen) deren Liebhabern zur Gemüthsergötzung verfertigt von J. S. Bach."

The harpsichord was the most important keyed instrument used during the 16th, 17th and 18th centuries. It served as an accompanying orchestral instrument in opera and oratorio. Like the spinet family, the harpsichord is on the plectrum principle.

The strings were set in vibration by points of quill or hard leather, elevated on wooden uprights known as jacks, and twitching or plucking them as the depression of the keys caused the points to pass upwards.

The earliest mention of the harpsichord is made by Eberhard Cersne, A. D. 1404. Vincenzo Galilei, the father of the astronomer Galileo Galilei, infers its direct derivation, in view of its harp-like disposition, to the harp.

No. 20*b*. Harpsichord, 5 octaves. Decorated.

Built by J. A. Haas, Hamburg, 1710.

No. 21.—Harpsichord, with two keyboards. 5 octaves.

Made by Jacobus Kirkman, London, 1769.

Has seven registers, two of eight and one of four-foot tone, one harp, one lute, and one machine stop. Dr. Burney, in Rees' Cyclopædia, gives Jacobus Kirkman's harpsichords high praise, regarding them as more full in tone and durable than those of Shudi. They retained certain features of the Antwerp Rucker model as late as 1768, preserving Andre Rucker's keyboard (nearly 5 octaves) with lowest G sharp wanting. This, as well as the retention of the rosette in the sounding-board, in which we find King David playing upon the harp, between the letters J and

K. Dr. Burney met with no harpsichords on the continent that could at all compare with those made in England by Jacob Kirkman and his almost life-long competitor, Shudi. (Grove's Dictionary of Music, vol. ii, page 61.)

No. 22. Harpsichord, with two keyboards, 5 octaves, made by Burkat Shudi.

Five registers, two of eight and one of four-foot tone, one lute and one harp stop. Shudi was a celebrated harpsichord maker, and enjoyed Handel's friendship. One of his harpsichords, No. 94, made in 1740, formerly belonging to Queen Charlotte, is now in Windsor Castle. The harpsichord in the Steinert collection bears No. 144, but has no date, and was probably made about 1743. The two harpsichords Nos. 511 and 512, both built in 1766, were made by Shudi for Frederick the Great, and are still in the Royal Palace in Potsdam. The Shudi harpsichord No. 762, built in 1775, was once the property of Jos. Haydn, and is now owned by the Music Verein in Vienna.

No. 23. Harpsichord, single keyboard, 5 octaves, made by Jacobus Kirkman in London, 1755

It has three registers, of which two are of eight-foot tone in unison, and one register imitating the lute. This instrument was formerly owned by Napoleon Bonaparte; was given, after his banishment to St. Helena, to a French sergeant, who brought it with him to this country, where he settled at Scituate, Mass. In 1833 he sold the instrument to Simon Bates, of Scituate Harbor Light, and by inheritance it passed into the hands of his son, James G. Bates, who is still alive, and from him into the possession of his daughter, Mrs. M. Wharff, now living at Gloucester, Mass., of whom M. Steinert purchased it. The Bates family is one of the oldest in Massachusetts, and traces its direct descent from Peregrine White, who came over in the Mayflower. They claim that Daniel Webster and other noted statesmen were in the habit of listening to the music of this harpsichord.

No. 24.—Harpsichord, 5 octaves.

Made by Jacobus and Abraham Kirkman, London, 1776.

Has four registers, of which two are of eight-foot tone, tuned in unison, and one of four-foot tone, also one register and knee pedal to throw on the octave.

HAMMERCLAVIERE.

The hammerclavier is the German name for the pianoforte, a musical instrument of the percussive group, the tones being produced by blows of hammers upon stretched strings, and the hammers being operated from a keyboard. Essentially the hammerclavier is a large dulcimer with a keyboard; but historically it replaced the clavichord and harpsichord, which were keyboard instruments, more akin to the harp than to the dulcimer. Several attempts were made during the sixteenth and seventeenth centuries to combine a keyboard with it, perhaps the most important being the pantaleone of Hebenstreit. The keyboard instruments then known were nearly or entirely incapable of gradation in the loudness of their tone; hence the new instrument when invented in Italy was called a piano e forte, because its main peculiarity was that its tone might be made either loud or soft at the player's will. Its widespread use in consequence of the many improvements made, brings into prominence, however, the disadvantages of a percussive tone, which cannot be sustained or varied after the initial stroke, of an ease of manipulation which invites slovenly and vulgar use, and of a temperament which, with the common neglect of frequent tuning, often hopelessly corrupts the player's musical ear.

No. 25. German Hammerclavier, 4½ octaves, by Johann Christoff Jeckel in Worms, February 18, 1783, single action. There are two stops, one piano of the "celeste" and the "forte." Both are divided into two sections, the bass and the treble, each moved independently of the other by four registers on the front

side over the keyboard. The chief interest lies in the forte stop, which raises the dampers in two sections by two stops. It consists of a strip of cloth fastened to a frame, which touches the strings lightly, so as to prevent their sounding when in their natural state; having no separate set of dampers for each set of strings, as in the present piano, which signifies its very primitive construction. Grove (III, 683) speaks of a French instrument similar to this, which he supposes was made in the reign of Louis Quinze. The action is very interesting. Grove calls it the "rudimentary German action," improved by Stein about 1777.

No. 25. **No. 26.**

No. 25.—German Hammerclavier, 4½ octaves.
Made by Johann Christoff Jeckel, at Worms, February 18th, 1783.

No. 26.—German Hammerclavier, 5 octaves.
Made about 1750, by Johann Friedrich Schneider, Nürnberg.

Black naturals and white sharps, two stops to draw the forte and celeste. Small wooden uncovered hammers strike the strings, single action. It rests, like the clavichord, upon a frame.

No. 27.—German Hammerclavier, 4½ octaves. About 1760.

Maker unknown, possibly made by Charles E. Frederici, of Gera, Germany. The sounding board covers the whole interior of the piano, and the keyboard projects from one side of the case similar to a spinet. The hammers strike the strings in front of the keyboard, the tuning pins being to the right side of the instrument. It has single action, and the dampers are raised by means of a stop to the left. Black naturals and white sharps.

No. 28. German Hammerclavier, 5 octaves, black naturals and white sharps, single action; has hand-stops to the left, and rests upon a frame. The case is richly inlaid. Tuning pins to the right, similar to the clavichord.

No. 29.—Upright Hammerclavier, 4½ octaves.

Two knee pedals, forte and celeste; no maker's name (about 1780). The case has the shape of an old-fashioned secretary, and its strings run in a horizontal direction, in opposition to the usual vertical on upright pianos. It is tuned to the right, and has double action, white naturals and black sharps. This is one of the most interesting instruments of the collection.

No. 30.—Square Pianoforte, 4 octaves. One pedal.

In form of a lady's sewing table; Stein action, white naturals and black sharps; is tuned one octave above the ordinary pianoforte. This interesting instrument has been in the possession of the Princess of Turn and Taxis in Regensburg, Germany, where it was purchased by Mr. Steinert.

No. 31. English Square Piano, 5 octaves, made by Broadwood & Co., London, about 1771. The action is single, known as the "Zumpe." It has two stops, the piano and forte. The forte is divided into two sections; they are operated by three levers inside the case at its left end, moved by hand. The sounding-board only extends across the right hand, not over the action. Rests, like the English spinet, upon a frame.

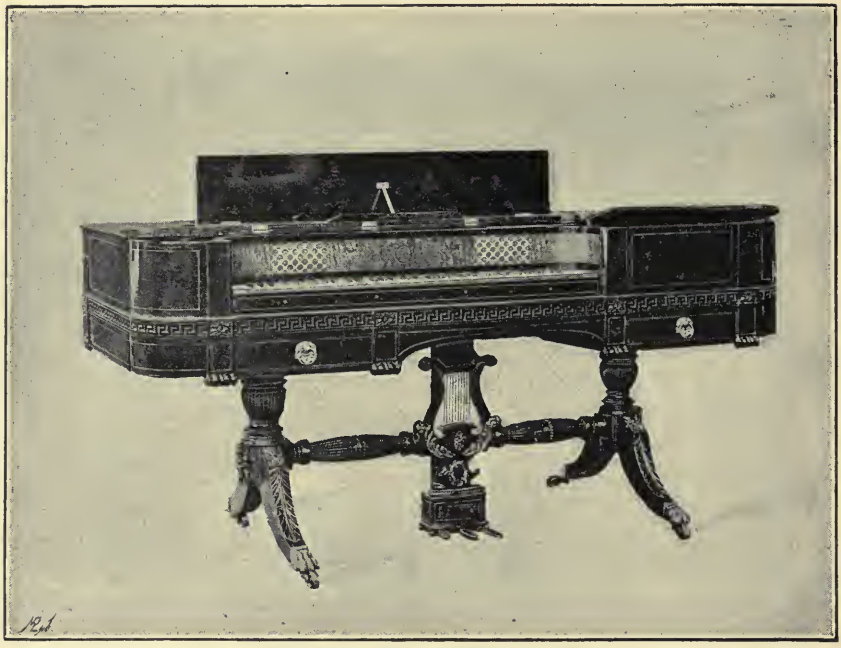
No. 32.—English Square Piano, 5½ octaves. Painted.

No maker's name. Double action. The case and legs are beautifully painted with flowers, and the top is richly inlaid with fancy woods.

No. 33.—Square Piano, 5½ octaves.

Made by Johann Schantz, Vienna, about 1780.

Two knee pedals, forte and celeste, double action. The case decorated with rich brass trimmings of the period of Maria Theresa, about 1780. Johann Schantz was Jos. Haydn's favorite pianoforte maker.



No. 34.—Pianoforte, 5½ octaves.

Made by John Geib, New York, about 1815.

Three pedals and triple strung. The instrument, which is inlaid with brass, rests upon a frame with claw feet, which are beautifully carved and gilded.

No. 35.—Square, 6 octaves.

Made by A. Babcock, Boston, about 1820

The case, in the empire style, is beautifully inlaid with brass. The pianos of Babcock were of most delicious tone and touch, and this instrument represents an excellent specimen of his production.

No. 36.—Square Pianoforte, of German pattern, 6½ octaves.

Made by Joseph Hiskey, Baltimore, Md., about 1820.

The sounding board covers the action, tuning pins above the keyboard like the grand piano, triple strung; four pedals, forte, celeste, bassoon, janizary music with drum, triangle and cymbal.

GRAND PIANOS.

No. 37.—Concert Grand, 5⅛ octaves.

Made by Johann Andreas Stein, in Augsburg, about 1760.

Black naturals and white sharps, with knee pedal. The case is made of German oak; the top is panelled. Stein, like Silbermann, was a celebrated builder of church organs, clavichords, harpsichords and pianofortes. He was the inventor of

the so-called Vienna pianoforte action, the knee pedal, and contrivances for shifting the keyboard, whereby the hammer, instead of striking three strings, strikes one string only, thus producing the "una corda" effect. Stein grands are hardly ever more met with

No. 38.—Concert Grand, 5 octaves.

Maker's name unknown. Was used by Haydn.

Black naturals and white sharps, knee pedal, and one stop in front of the keyboard to produce the "celeste." This instrument has been the property of Jos. Haydn, and was used by him in his birth-house, and later on in his summer residence in Rohrau near Vienna.

No. 39. Concert Grand, 5 octaves and knee pedal.

Black naturals and white sharps, with the inscription on the sounding-board, "Mozart's Spinet." No maker's name. This instrument was found in Salzburg, and is an exact counterpart of the grand used by Mozart, now in the Mozarteum in Salzburg, which does not bear the maker's name, but it is claimed was made by Anton Walter of Vienna. Haydn and Mozart used to play duets upon this instrument.

No. 40. Concert Grand, 5 octaves and knee pedal.

Made by Johann Jacob Könicke in Vienna.

Has black naturals and white sharps. A true copy of Joh. Andreas Stein grand. Built about 1770.

No. 41. Concert Grand Piano, 6 octaves.

Made by Anton Walter & Son, Vienna.

Six pedals: No. 1, shifting the keyboard for una corda; No. 2, shifting the pedal for tua corda; No. 3, bassoon; No. 4, forte; No. 5, celeste; No. 6, drum, triangle and cymbals. The case with elegant decorations and the legs artistically carved. Anton Walter was Mozart's favorite pianoforte maker. About 1780.

No. 42.—Concert Grand, 6 octaves.

Made by Joh. Gröber, Insbruck, Tyrol.

Five pedals: No. 1, shifting keyboard; No. 2, forte; No. 3, piano; No. 4, pianissimo; No. 5, bassoon.

No. 43.—Beethoven's Concert Grand, 6½ octaves.

Built by Madame Nanette Streicher, née Stein, Vienna, 1816.

Five pedals: No. 1, una corda; No. 2, tua corda; No. 3, celeste; No. 4, bassoon; No. 5, forte. Bearing on the sounding-board the following inscription: "Nanette Streicher née Stein, Wien, 1816." Madame Streicher was the daughter of the celebrated piano maker, John Andreas Stein of Augsburg, and is the builder of this instrument. She was an intimate friend of Beethoven, and it is said that this instrument has been loaned by her to the great composer during his stay in his summer retreat in Baden.

No. 44.—Concert Grand, 6 octaves.

Made by Madame Nanette Streicher, née Stein, Vienna.

It is marked No. 1570, and has four pedals: No. 1, una corda; No. 2, tua corda; No. 3, celeste; No. 4, forte. There is a grand piano made by the same lady at Windsor Castle, England, the property of the Queen of England.

No. 45.—Vertical Concert Grand, 6 octaves.

Made by C. Müller, Vienna, about 1780.

Has black naturals and white sharps, three pedals: No. 1, una corda; No. 2, celeste; No. 3, forte. The front of this instrument is highly decorated, and contains a gilded swan on top of it.

No. 46.—Concert Grand, 6 octaves.

Made by Andre Stein, d'Augsburg, Vienna.

With knee pedal, black naturals and white sharps. André Stein was the son of the great Joh. Andreas Stein of Augsburg, and a brother to Madame Nanette Streicher.

No. 47.—Vertical Grand. 6 octaves, 4 pedals.

CLOSED.

Made by André Stein, d'Augsburg, Vienna.

On the inside are the letters A. S., 1779.

No. 47.—Vertical Grand.

OPEN.

Made by André Stein, d'Augsburg, Vienna.

On the inside are the letters A. S. 1779.

No. 47.—Piano Violin, 6 octaves.

Made by Baudet, Paris.

The strings in this upright piano are made of wire as in a pianoforte, but of greater relative thickness, there being one only to each note. They run in a vertical direction, and to each string is attached a small bundle of bristles, projecting in front about one inch. A metallic roller, slightly rosined, is made to turn by means of treadles. When the keys are put down, a tangent holding a piece of whalebone presses the bristles toward the roller, when motion is then communicated through the bristles to the strings, and in consequence their musical vibration is excited. The impression on the ear is that of a string orchestra.

HISTORY OF THE PIANO-FORTE.

FROM CLASSIC MONOCHORD TO MODERN PIANO.

THE history of the pianoforte dates from the monochord and the ancient Greeks.

The monochord is an instrument consisting of a long box of thin wood, with a bridge fixed at each end, and an intermediate movable bridge, over which is stretched a wire or catgut string.

The monochord is said to have been invented by Pythagoras in the sixth century, B. C. Its principle was used twenty-four hundred years before by the Egyptians. The instrument was used for centuries in the church to initiate the singers into the mysteries of the eight tones.

Ultimately it was found more convenient to dispense with shifting bridges and at the points of division to adjust fixed bridges raised by an apparatus resembling the keys of the organ, to press the strings and produce the notes required. This led to the invention of the clavichord. The clavichord has been followed by the square pianoforte, of which it was the prototype.

The lower or natural keys were usually black, and the upper or chromatic, white. The strings of finely drawn brass wire, were stretched nearly in the direction of the length of the case, but with a bias toward the back. On the right of the player there were inserted in the soundboard, strengthened on the under side by a slip of oak to receive them, the wrests, or tuning pins, round which the strings were fastened, while at the back and partly

along the left hand side of the case, they were attached by small eyes to hitch-pins of thicker wire. On the right hand the strings rested upon a curved bridge, pinned to fix their direction, and conducting their sound-waves to the soundboard, a flat surface of wood beneath, extending partly over the instrument. Nearly at the back of each key, in an upright position, there was placed a small brass wedge or "tangent" about an inch high and an eighth of an inch broad at the top.

USES OF THE "TANGENT."

The tangent, when the key was put down, rose to the string and pressing it upward set it in vibration. With a good touch the player could feel the elasticity of the string, and the more this was felt the better the instrument was considered to be. By the pressure of the tangent the string was divided into two unequal lengths, each of which would have vibrated, but the shorter was instantly damped by a narrow band of cloth interlaced with the strings, which also damped the longer section as soon as the player allowed the key to rise and the tangent to fall.

The tangent thus not only produced the tones, but served as a second bridge to measure off the vibrating lengths required for the pitch of the notes. Thus a delicate tone was obtained that had something in it charmingly hesitating or tremulous. The tone of the clavichord, although very weak, was yet capable, unlike that of the harpsichord or spinet, of increase and decrease, reflecting the finest and most tender gradations of the touch of the player. In this power of expression it was without a rival until the pianoforte was invented.

Koch, in his musical lexicon, describes the clavichord as "Labsal des Dulders, und des Frohsinns theilnehmenden Freund" (the comfort of the sufferer and the sympathizing friend of cheerfulness).

The clavichord was a favorite instrument with Johann Sebastian Bach, who preferred it to the pianoforte. Mozart used

the clavichord now in Mozarteum at Salzburg in composing his "Zauberflöte" and other masterpieces. Beethoven is reported to have said:—"Among all keyed instruments the clavichord was that on which one could best control tone and expressive interpretation."

Clavichords made prior to the last century had strings for the lower or natural keys only, the semitones on the upper keys being produced by tangents directed toward the strings of the lower. Thus C sharp was obtained by striking the C string at a shorter length. D sharp and E in a like manner also.

About the year 1725 Daniel Faber, of Crailsheim, gave the semitone its own string, and instruments so made were distinguished as "bundfrei" from the older "gebunden," which was a system of "fretting."

The early history of the clavichord previous to the fifteenth century, together with that of the chromatic keyboard, rests in profound obscurity. Welcker describes the oldest clavichord he had met with as bearing the date 1520, having four octaves, but the notes D sharp and G sharp were wanting. Clavichords had, even with the last improvements, a soft, hesitating tone. After they came into general use the idea arose of constructing an instrument whose strings could be set into stronger vibration by means of more powerful tangents, in order to gain thereby a more powerful, more intense tone.

STRINGED INSTRUMENTS OF THE MIDDLE AGES, ON THE PLECTRUM SYSTEM.

Of the many stringed instruments that could be used for this purpose there were known in the Middle Ages, in addition to the harp, the psaltery and the dulcimer (German, hackbrett).

The psaltery, in triangular, square, curved or harplike form, was either carried with a ribbon around the neck, or when used was placed on some piece of furniture. Its strings were operated by means of a plectrum, which was fastened by rings to the hand

of the performer. The psaltery was the prototype of the spinet and harpsichord, particulary in the form described by Praetorius in his "Organographia" as "Istromento di porco," so-called from its likeness to a pig's head.

Musical writers of the year 1650 say that the psaltery, played with a skilled hand, stood second to no other instrument, and praise its silvery tone in preference to that of any other and its purity of intonation so easily controlled by the fingers.

The spinet is a keyed instrument with plectra or jacks. It was used in the sixteenth, seventeenth and eighteenth centuries. It may be described as a small harpsichord or virginal, with one string to each note. It is said to be the invention of the Venetian Spinetti. Banchieri, in 1608, derives the name "spinetta" from this maker. It is in shape the same as the clavichord and has the same keyboard. The jack action is derived from the psaltery plectrum, while the tangent of the clavichord comes from the monochord bridge. All instruments of the spinet, harpsichord, virginal and clavicymbalo family were on the plectrum principle, and therefore were incapable of dynamic modification of tone by difference of touch. The strings were set in vibration by points of quill or hard leather, elevated on wooden uprights known as jacks, and twitching or plucking them as the depression of the keys caused the points to pass upward.

THE HARPSICHORD.

The harpsichord in its form and in the arrangement of the keyboard and strings resembled a piano. In form it resembled a modern grand pianoforte. The compass of the keyboard was from four to five octaves. The number of separate strings to each key varied from one to four, sometimes including one tuned an octave or two above the others. Two keyboards were sometimes combined, one for soft effects, the other for loud. Numerous devices usually connected with the jacks, were introduced at different times to secure variety in force, and especially in quality.

These mechanisms, which often aimed to stimulate the tone qualities of various orchestral instruments, were usually controlled by stop-knobs near the keyboard. The harpsichord was the most important keyed instrument during the last century. It was regularly used in all dramatic music, especially in accompanying recitatives, and in orchestral music. The conductor usually directed from his seat at a harpsichord placed amid the other instruments.

THE EARLIEST HARPSICHORD.

The earliest mention of the harpsichord is under the name of clavicymbalum, in the "Rules of the Minnesingers," by Eberhard Cersne, A. D. 1404. With it occur the clavichord, the monochord and other musical instruments in use at that time. The absence of any prior mention or illustration of keyed instruments is negative evidence only, but it may be assumed to prove their invention to have been shortly before that date—say, in the later half of the fourteenth century. Jean de Muris, writing in 1323 and enumerating musical instruments, makes no reference to either clavicymbalo or clavichord, but describes the monochord, as in use for measuring intervals at that time. Moreover, there was no music wire before this epoch; the earliest record of wire drawing being 1351 A. D., at Augsburg. There were three different shapes of jack instruments made—the harpsichord of trapeze form, the clavichord of oblong or pentangular form, frequently called spinet or virginal, and the upright harpsichord or clavicytherium. It must be remembered that the long harpsichords were often described as spinets or virginals from their plectra or their use by young ladies, but the table-shaped ones known commonly by the Latin names were never called harpsichords.

FAMOUS SPINET AND HARPSICHORD MAKERS.

The most celebrated spinet and harpsichord makers were Joanes Antonius Baffo, Venice, 1574; Hans Ruckers, 1575;

Andreas Ruckers, Antwerp, 1614; Pascal Taskin, 1786. Paris—Annibal Rosso, 1555; Keene, 1685; John and Thomas Hitchcock, 1630; Charles Harvard, 1676; Haxby, of York, 1766. Haas, Hamburg, 1700. The Ruckers, of Antwerp, stood the highest in the art of harpsichord making. It was the school of the Ruckers, transferred to England by a Fleming named Tabel, that was the real basis of harpsichord as a distinct business in that country, separating it from organ building, with which it had been, as in Flanders, often combined. Tabel's pupils, Burkhand Tschudi and Jacob Kirkman, became famous in the last century, developing the harpsichord in the direction of power and majesty of tone to the furthest limit.

FROM DULCIMER TO PIANO-FORTE.

The dulcimer is the prototype of the piano, just as the monochord was that of the clavichord and the psaltery that of the harpsichord. The psaltery and dulcimer were so nearly alike that one description might serve for both, were it not for the different manner of playing them. The strings of the psaltery were set in vibration by a plectrum, whereas the tones of the dulcimer were produced by small hammers held in the hands of the performer.

It is also no less desirable to separate in description instruments so nearly resembling each other, on account of their ultimate development into the harpsichord and pianoforte by the addition of keys. The roughness of description used by mediæval Italians in naming one form of psaltery "strumento di porco," pig's head was adopted by the Germans in their faithful translation "schweinskopf," and in naming a dulcimer "hackbrett," a butcher's board for chopping sausage meat.

The dulcimer is a trapeze shaped instrument of not more than three feet in greatest width, composed of a wooden framing enclosing a wrestplank for the tuning pins around which the strings are wound at one end and a soundboard ornamented with two or more sound holes and carrying two bridges between which are the

lengths of wire intended to vibrate and a hitch-pin block for the attachment of the other end of the strings. Two, three, four and sometimes five strings of fine brass or iron wire are grouped for each note.

The dulcimer laid upon a table or frame is struck with hammers, the heads of which are clothed on either side with hard and soft leather to produce the forte and piano effects. The tone, harsh in the loud playing, is always confused, as there is no damping contrivance to stop the continuance of sounds when not required.

LOUIS XIV.'S "PANTALEON."

Pantaleon Hebenstreit, of Eisleben, became about 1697 a virtuoso upon the dulcimer, which he quadrupled in dimensions, and had constructed as a double "hackbrett" with two soundboards, each with its scale of strings on one side, overspun catgut on the other wire. With this powerful chromatic instrument, demanding herculean force to play, Hebenstreit travelled to Paris in 1705, where Louis XIV. christened it with his name, "Pantaleon." Kühnan (in Mattheson's "Critica Musica," December 8, 1717), praises the instrument and its superiority over the harpsichords and clavichords in possessing the properties of piano and forte. It was this, according to Schröter's account, that led him to ponder over a keyed instrument to do the like and to his notion of a pianoforte.

In Germany, France and Italy the celebrated organ builder, Gottfried Silbermann, was formerly universally considered as the inventor of the pianoforte, until the organist, Ch. G. Schröter, ten years after the death of Silbermann, in 1763, claimed the honor of said invention for himself, and attempted to furnish proofs for his claims by means of documents and drawings. Lately, however, extracts from Italian and French archives have been published, which for the first time accurately reveal the part taken by Schröter and Silbermann in this invention.

CRISTOFORI THE REAL INVENTOR.

These communications, verified by the pianofortes of those times still existing, necessitate a complete revolution of all previous histories of the pianoforte. They are chiefly the results of the efforts of a society in Florence which had resolved to have a celebration on March 7, 1874, in commemoration of Cristofori, the first and without doubt independent inventor of the "clavicymbel with piano and forte." This instrument, known since 1711, was called by its inventor "pianoforte," and has retained such name ever since outside of Italy. After the inventor's death he was casually named "Cristofori," "Cristofani," "Cristofali," &c. Cristofori, according to the latest researches, was born May 4, 1653, at Padua. Here he attained such a high renown as a keyed instrument maker that the Prince Ferdinand of Medici, known as a patron of arts, and especially as a connoisseur of music, induced him to settle in Florence and enter his services as Court maker of clavichords, spinets and harpsichords, and to also serve as custodian of his collection of musical instruments. In the year 1711, in a newspaper published in Venice, the invention, hitherto considered impossible, of a "Gravecembalo col piano e forte" was announced. It was further added that the lucky inventor was the paid and employed Cymbalist of the Prince of Toscana—namely, "Bartolommeo Cristofali," and that he had already completed three grand pianos of the usual size and equal quality. It was especially mentioned that in these new instruments it depended upon the strength with which the player touched the key to produce a weaker or stronger tone with all its gradations. Many musicians, the author of said article, Marchese Scipione Maffei di Verona, continues, refuse to pay the tribute due to this invention, because its tone is too weak and obtuse, although one gets easily accustomed to it, and soon even prefers it to the former instruments. The chief objection made to the new instrument is this, that one has to become accustomed to the manner of playing it even if expert on the other keyed instruments. Maffei, however,

says, as this is a new instrument, its properties must be first studied in order to cause its peculiarities to be exhibited with skill and taste.

MARIUS, SILBERMANN AND SCHROETER.

Marius, doubtless, is the second equally independent inventor of a pianoforte. In 1716 he presented to the Royal Academy in Paris the designs and descriptions of four different pianoforte models. The Court composer, John F. Agricola, in Berlin writes in a musical publication in 1767:—"Mr. Gottfried Silbermann is renowned on account of his beautiful grands and other claviere, of his invention of the cymbal d'amour and also on account of his improvement of the pianoforte. The first attempt at this pianoforte, however, was conceived and executed in Italy. But Mr. Silbermann has made so many improvements in it that he is not much less than the inventor thereof."

In 1763 Organist Ch. G. Schröter, in Nordhausen, hereinbefore mentioned, published a minute description of a new invented clavier, on which one can play loud or soft, according to the way the keys are touched. He says that he was led to this invention by the pantaleon of the renowned virtuoso Hebenstreit, and that already in 1717 he had made attempts to produce a keyed instrument whose strings could be set in motion by means of beaters or hammers instead of the tangents, quills or plectra hitherto used. He further narrates that in 1721 he submitted two models to the Court in Dresden. In one the hammers struck the strings from above, in the other from below; that both were supplied with dampers and that the strings could be made to resound softly or loudly. The models met the approval of the King, who ordered the construction of the one struck by hammers from below. The execution of this order was never completed, and when Schröter desired to leave Dresden he could not obtain possession of his models in spite of all his efforts. Without his knowledge and

consent, as he says, his invention became known in Germany, and bad imitations thereof were made and called pianofortes.

Agricola adds the following to the history of the pianoforte:—

"Mr. Gottfried Silbermann had made at first two of these instruments. The blessed chapel master, Johann Sebastian Bach, had seen and played on one of them. He had praised its tone and even admired it, but he had found the fault that in its high notes it was too weak, and that it was too hard to play. Mr. Silbermann had heard these complaints with ill grace and had been angry with Mr. Bach for a long time. But his own conscience told him that Mr. Bach's criticisms were correct. He came to the conclusion, it must be said to his glory, not to make any more of these instruments, but to work hard in order to invent something to do away with the faults mentioned by Mr. Bach. On this he worked many years. Finally, after Mr. Silbermann had in fact made many improvements, he sold another instrument to the Court in Rudolstadt, and shortly afterward one to His Royal Majesty the King of Prussia, and, as this one met with universal approval, many more. He even had the praiseworthy ambition to exhibit one of these instruments of his later construction to the chapel master, Mr. Bach, and to have him examine the same and received from him his utmost approval."

According to this report of Agricola, who knew Silbermann personally, there remains no doubt that we are indebted to the industrious Silbermann for the practical construction and introduction of the pianoforte.

CONSERVATISM OPPOSING PROGRESS.

The greatest musicians of that age, Johann Sebastian Bach in 1737 and Mozart in 1777, had acknowledged the value of the invention of the pianoforte, but still a long time transpired before it could assume the rank due to it among the keyed instruments of that age. As in the history of music, we can here plainly see the

strife of progress against conservatism, the resistance of established rules against new principles.* A musical critic in Leipsic writes in 1782:—"In the grand piano (referring to the harpsichord) the heart cannot express itself, with it no picture can be completely produced, as light and shadows cannot be expressed; only a clearly defined sketch can be made. It is adapted either to bear or to carry away the stream of music—in short, to flow on with it."

GRAND PIANO-FORTE.

"The forte piano," that writer continues, "stands higher, especially one made by Frederici, piano maker in Gera, or Stein, piano maker in Augsburg. Here the heart can express itself and manifest its manifold feelings and exhibit light and shadows. But it is deficient in shadings and minor attractions, so that it is adapted as an instrument for concerts and chamber music. The clavichord, however, stands highest of all. Although on account of its nature excluded from the concert hall it is the companion of the recluse. Here I can reproduce the feelings of my heart, can shade, fully express, drive away and melt away a tone through all its swellings."

He closes his remarks as follows:—"In order to judge a virtuoso one must listen to him while at the clavichord, not at the forte piano, and least of all at the grand piano." (Harpsichord.)

Forkel, in his "Musical Almanac" of 1782, prefers the clavichord to all other keyed instruments, although he praises greatly the fine execution and the finely shaded playing on a pianoforte made by Spath.

OLD TIME MUSICAL CRITICISM.

The poet and musician, Ch. Fr. Daniel Schubart, in 1785 thus expresses himself:—"The musical coloring cannot be executed on

*"So giebt der anonyme 'Verfasser des *Musicalischen Handbuches auf das Jahr 1782*, welches in 'Alethinopel' (Leipzig) gleichzeitig mit dem *Musicalischen Almanach* (von Forkel) in Schwickert'schen Verlage herauskam, dem Pianoforte noch nicht den Vorzug."—G. F. Weitzman, *Geschichte des Claviers*, page 275.

the pianoforte in all its nuances, but the clavichord, this solitary, melancholy and inexpressibly sweet instrument, if it is made by a master, is preferable to the Grand and Fortepiano through the pressure of the finger, through the swinging and vibrating of the strings, through the strong and soft touch of the hand, the increase and decrease of tone, the melting under the fingers of the player, expiring trill of the portamento, in short all expressions of feeling can be visibly manifested."

We see that long after the general introduction and use of the pianoforte, the clavichord was preferred.

Silbermann's pianofortes in the beginning seem all to have been made in wing shape.

Of Charles E. Frederici (died 1779), of Gera, one of the oldest makers of such instruments, it is reported that he made them in clavichord, or square form also, and that he called them by the distinguishing name of "Fortbien." On account of their excellent workmanship, we are assured that they were scattered over half the globe.

The pianofortes which John Adam Spath (died 1796) in Regensburg made and sold for forty ducats were also wing shaped. They were highly esteemed in Germany. The instruments of Johann Andreas Stein of Augsburg, (died 1792,) far surpassed them, however. When Mozart had become acquainted with these instruments he selected them especially for his performances, and thereby brought them into public favor and the widest circulation. Being in Augsburg in October, 1777, he was introduced to the pianos of Stein.

MOZART'S FAVORITE INSTRUMENT.

Stein's newly contrived pianoforte escapement appears to have charmed Mozart. In a letter to his father he refers to the evenness of its touch, saying that "the action never 'blocks' and never fails to sound—as is sometimes the case with other pianos. On the other hand, it never sounds too long, and the machine pressed

by the knee (to act as a foot pedal) is prompt to raise the dampers, or on discontinuing the pressure ever so little is as prompt to let them down upon the strings again."

The Stein escapement differs from Cristofori's and the English action in the fact that the axis of the hammer changes its position with the rising of the key, the hopper (Auslöser) becoming a fixture at the back of the key. From this difference a radical change of touch took place, and an extreme lightness became the characteristic of the Stein action, as developed by Andreas Streicher, of Vienna, Stein's son-in-law, who, in 1794, improved and finally established the great renown of the Viennese pianofortes.

Returning to Mozart, his concert grand in the Mozarteum at Salzburg is a small five-octave instrument with black natural keys and white sharps made by Anton Walter, who became in the end Mozart's favorite maker.

The merits of establishing German pianoforte making belongs to Stein, whose inventive talent and artistic devotion were displayed in the good instruments he made, which by 1790 at latest were adopted as models both in North and South Germany, as the two grand pianos formerly belonging to Queen Louisa, made by Huhn, organ builder of Berlin, and preserved in memory of him at Potsdam, unmistakably show. One of these instruments, and apparently the older one, bears no name outside, but internal examination shows that the maker was the same who made the 1790 one. Both closely resemble Mozart's piano, by Walter, of Salzburg, and the original model by Stein of 1780.

A FAMILY OF PIANO MAKERS.

The Stein's were a family of pianoforte makers and players. They consisted of the father, Johann Andreas; his two sons, Matthäus Andreas, Friedrich, and a daughter, Maria Anna, known as Nanette, who in 1794 married Streicher and was really

the most prominent of the group. Though Streicher ultimately succeeded to the business, which had been removed from Augsburg to Vienna, his name does not appear for several years in connection with it. The firm, as late as 1801, was "Geschwister Stein," subsequently "Nanette Stein" only, which appears as the maker's name on a grand piano with six pedals, existing (1882) in Windsor Castle.

Nanette Stein was born January 2, 1769, at Augsburg. When barely eight she played to Mozart on his visit to Augsburg in 1777, and in spite of the bad musical habits she had contracted he said of her, "She may do yet for she has genius." Her talent and capacity were so obvious that her father early initiated her into the details of his business, and on his death, February 29, 1792, she carried it on in conjunction with her brother, Matthäus Andreas Stein, with a decision and energy almost masculine. In 1793 she married Johann Andreas Streicher, an excellent pianist and teacher from Stuttgart, and then her husband and mother moved to Vienna.

The new firm of Nanette & Andreas Stein was established. In 1802 the brother and sister dissolved partnership and setting up for themselves as "Matthäus Andreas Stein" and "Nanette Streicher, *née* Stein." Both firms endeavored to perfect their instruments in every possible way, while still adhering to the traditions of their father, and Stein, of Vienna, became as celebrated as Stein, of Augsburg had been. Nanette Streicher was at once an energetic and capable woman of business, a pianist of remarkable excellence, a person of great cultivation and a model wife and mother. Her name is closely connected with that of Beethoven. It is well known that she did much to help him in his domestic arrangements, lightened the burden of his housekeeping and even looked after his bodily health. Thayer, in his work on Beethoven, says:—"In May, Beethoven, on the advice of his medical men, went to Baden, hither he was followed by his friend, Mme. Streicher, who remained at Baden for the summer

and took charge of his lodgings and clothes, which appears to have been in a deplorable state. On his return to Vienna the Streichers continued their friendly services, procured him two good servants and otherwise looked after his interests. These servants remained with him for a year or two, and this was probably the most comfortable time of the last half of Beethoven's life."

BEETHOVEN'S CLEVER PATRONESS.

Beethoven, as well as Mozart, always showed a preference for the pianofortes made by Stein and his daughter Nanette. Thayer has unearthed a record of Pastor Junker, showing that Beethoven, in 1791, when residing at Bonn, always used an instrument of Stein. It is claimed by those knowing the history of the grand piano made by Nanette Streicher, forming one of the collection of M. Steinert, as illustrated here, that it was furnished by the maker to her friend Beethoven for his concerts and during his many wanderings away from home, that he enjoyed playing upon that particular instrument, and that Mme. Streicher kept it exclusively at the disposal of the great master whenever he felt like using it.

In one of his many letters to Mme. Streicher, Beethoven says: —"Perhaps you do not know, though I have not always had one of your pianos, that since 1809 I have invariably preferred yours."

The instrument has a very soft and sweet tone, and no true musician will fail to pay a silent homage to an instrument used by the immortal Beethoven, and as such it will always remain an object of reverence not only for the great genius who probably created some of his grandest works out of its depths of harmonies, but also for the noble woman who built the grand instrument, and, above all, who served the master in his domestic afflictions, and thus sweetened his life during his many sufferings.

A German, Johann Zumpe, transplanted in 1766 the Silbermann invention, the pianoforte, to London. This resonant instrument, made by him very skillfully, met here with universal favor,

and soon attained such a splendid reputation that it was used to embellish a benefit performance. On a theatre programme of May 16, 1767, we find the following:—

"End of Act I.—Miss Brickler will sing a favorite song from 'Judith,' accompanied by Mr. Dibdin on a new instrument called pianoforte."

THE PIANO IN LONDON.

A year later the London Bach—Johann Christian Bach—played in a concert for the first time publicly on a pianoforte. It was of great influence for the growth and improvement of the pianoforte, that in 1775 Muzio Clementi used the pianoforte in a concert in London, not only with great success, but since that time adapted his brilliant compositions to this useful instrument. The mechanism of the Silbermann piano, in which the hammers, independent of the key and over them, rest on a particular rail, was especially improved by Backer, Stodart and Broadwood to such an extent that the new invention was known under the name of "English action."

In 1768 Sebastian Erhard (he afterward changed his name to Erard) came from Strasburg to Paris. He entered the workshop of a piano maker, and showed himself to be such a discreet, enterprising and persevering workman that his reputation soon filled all Paris. At the wish of an influential patron, the Duchess of Villeroy, he built in 1777 his first instrument, which met with universal applause at the soirées of his patron.

PIANO MAKING IN PARIS.

About this time also John Baptist Erhard came to Paris and shared from that time all the labors of his brother. Soon the piano factory erected by these brothers at Paris became highly esteemed and patronized. Sebastian, inexhaustible in inventions, built for the Queen, Marie Antoinette, a "piano organise" with two keyboards, of which one operated a pianoforte and the other

an organ, and on which a "stop expressive" had been provided. A second stop transported the instrument as much as three semitones higher or lower.

An everlasting name in the history of piano making Erard made for himself by his invention, in 1823, of the hammer mechanism (double repeating action), which invention has since then been used in all concert grands with English mechanism.

John Broadwood of London, as early as 1770, represents the English School of pianoforte building. He was a man of inventive genius and thereby he made many valuable improvements in the piano. His sons James Shudi and Thomas Broadwood likewise contributed greatly to give the Broadwood piano its world-wide reputation.

In many cities of Germany distinguished piano makers can be found, of whom Bluethner of Leipsic, Schiedmeyer of Stuttgart, Kapps of Dresden, Bechstein of Berlin deserve chief mention.

In Austria, the most prominent builder of grand pianos at the present date is Ludwig Boesendorfer of Vienna. In the United States of America good pianos were made already in the beginning of the present century. The names of John Osborn and Alpheus Babcock, both of Massachusetts, may be mentioned in this connection. They were succeeded by Jonas Chickering, the founder of the celebrated house of Chickering & Sons.

In Philadelphia, Conrad Meyer occupies a high position as the inventor of an iron frame.

In Baltimore, Knabe & Co. holds a most prominent place amongst its Piano builders.

In New York, Nuns & Clark, Bacon & Raven, Dunham & Stoddard, Hazleton and others may be mentioned as makers of good instruments. During the last 40 years, however, the house of Steinway & Sons has made so many radical improvements in the art of piano building as to completely revolutionize it, and their system called the "Steinway System" has been adopted all over Europe, being considered the best.

A SYNOPSIS OF THE ATTAINMENTS

OF

THE GREAT PIANO-BUILDERS

OF THE

18th AND 19th CENTURIES.

THE history of pianoforte building is replete with almost as many celebrated men as that of the violin. While the latter has its shining lights in Caspar di Salo, the Amatis, Guarneris, Stradivaris, Stainer and others, the pianoforte can enumerate as many historical names amongst its builders. To begin with, mention must be made of Gottfried Silbermann, a member of a family of organ, clavichord, harpsichord and pianoforte makers. He was born in Frauenstein, Germany, 1683. He was first apprenticed to a book-binder, but soon left him and went to his brother Andreas, at Strasburg. This city he had to quit in 1707, on account of an attempted abduction of a nun, and then returned to Frauenstein, where he built his first organ. Although he attained great celebrity as an organ builder, he became equally renowned as a maker of clavichords. Philip Emanuel Bach used one for nearly half a century, and while playing on the same, he excited the admiration of Dr. Burney. It is a well established historical fact that Gottfried Silbermann was the first maker of pianofortes in Germany. He built three grand pianos for Frederick the Great, for his castle at Potsdam, where they still remain to-day.

Agricola adds the following to the history of the piano:

"Mr. Gottfried Silbermann had made at first two of these instruments. The blessed chapel master, Johann Sebastian Bach, had seen and played on one of them. He had praised its tone and even admired it, but he had found the fault that in its high tones it was too weak, and that it was too hard to play. Mr. Silbermann had heard these complaints with ill grace, and had

been angry with Mr. Bach for a long time. But his own conscience told him that Mr. Bach's criticisms were correct. He came to the conclusion, it must be said to his glory, not to make any more of these instruments, but to work hard to invent something to do away with the faults mentioned by Mr. Bach. On this he worked many years. Finally, after Mr. Silbermann had in fact made many improvements, he sold another instrument to the Court of Rudolstadt, and shortly afterward one to His Royal Majesty the King of Prussia, and, as this one met with universal approval, many more. He even had the praiseworthy ambition to exhibit one of these instruments of his later construction to the chapel master, Mr. Bach, and to have him examine the same, and receive from him his utmost approval."

According to this report of Agricola, who knew Silbermann personally, there remains no doubt that we are indebted to the industrious Silbermann for the practical construction and introduction of the piano.

He was followed by Johann Andreas Stein, born at Heidesheim, 1728. Although nothing is known of his early career, he is known to have lived in Paris in 1758. He, like Silbermann, was a builder of organs, clavichords and harpsichords, and later on of pianofortes. After leaving Paris he became organist of the Barfüsser-Kirche at Augsburg, and while there he built the celebrated organ of that church, as well as the organ of the Kreuz Kirche. As a pianoforte builder he justly deserves the name of "the father of the German school," for the reason while Silbermann adopted the action used by Christofori, the real inventor of the pianoforte, Stein invented an action totally different and more simple. The Stein escapement differs from Christofori's and the English action, in the fact that the axis of the hammer changes its position with the rising of the key, the hopper, (Auslöser) becoming a fixture at the back of the key. From this difference a radical change of touch took place, and an extreme lightness became the characteristic of the Stein action, as developed by Andreas Streicher, of

Vienna, Stein's son-in-law, who, in 1794, improved and finally established the great renown of the Viennese pianos. Stein was also the originator of the Kneepedal, called the genouilliere, which preceeded the foot pedal and served to raise the dampers. He also invented the shifting of the keyboard, whereby the hammer, instead of striking three strings, only strikes one, and this "una corda" he named Spinettchen. Mozart was a great admirer of Stein's pianos, and in his historical letter to his father, he speaks at length of its evenness of touch and remarkable tone.

As hereinbefore stated, Johann Andreas Streicher, son-in-law of Stein, his wife, the celebrated Nanette and Stein's two sons, André and Frederick, moved to Vienna in 1793. Streicher himself was an excellent musician and professor of music, renowned for his learning and his great friendship for Schiller. This family while in Vienna, made many improvements in the Stein piano, and their piano, the Streicher piano, attained a world-wide reputation. In England, John Broadwood of London made many improvements in the construction of the pianoforte. He changed the customary construction of the square piano by removing the wrest-plank holding the tuning pins, from the right hand side as in the old clavichord, to the back of the instrument. He also introduced the division of the bridge on the sound board of the grand piano. His son, James Shudi and Thomas Broadwood also invented many improvements in the construction of the piano. In France, Sebastian Erard constructed in 1809 a repetition grand piano action, and also invented the inverted or upward bearing bridge at the wrest-plank. Ignatz Pleyel founded in 1807, in connection with his son Camille, a piano factory in Paris. Their pianos were noted for their sympathetic tone, and for offering to the performer such tone colors as to highten the expression of the composition. Chopin thus expresses himself on the Erard and Pleyel pianos:

"Quand je suis mal disposé, je jour sur un piano d'Erard et j'y trouve facilement un son fait. Mais quand je me sens en

verve et assez fort, pour trouver mon propre son a moi, il me faut un Piano de Pleyel."

In Germany, in 1855, Frederick Wilhelm Carl Bechstein established a pianoforte factory in Berlin. Hitherto the north German piano was far inferior to the Viennese system, but Bechstein, by adopting the *American system of iron frames* and the English action, constructed instruments that became celebrated. Ignatz Boesendorfer established a factory in Vienna in 1828. He strengthened his instruments in their vital parts to such an extent, that Liszt in his early career found them only adequate for the many demands for his new powerful school. His son Ludwig succeeded him in 1859 and followed in the footsteps of his father, and by making many new improvements, built only grand pianos noted for the strength and purity of tone and elasticity of action, and his instruments to-day are not surpassed by those of any builder in Germany and Austria.

In the United States of America, Benjamin Crehore of Milton, Mass., a suburb of Boston, built excellent square pianos in 1798. His instruments were constructed according to the English system. Although piano building at that time was something new in America, yet it is well established that this little shop was the training school of such men as John Osborn, and of the two brothers Lewis and Alpheus Babcock, who served their apprenticeship there. The instruments of these latter makers were not only the equal of the celebrated London makers, such as Broadwood, Longman, Broderip and Clementi, but even surpassed them in many respects, as shown by instruments still in existence. The Babcocks made pianos in Boston as early as 1810. John Osborn in the same place in 1815. In 1819, Jonas Chickering became an apprentice in Osborn's shop. James Stewart, a Scotchman, became Osborn's partner in 1820, and after quarrelling with him, entered into a copartnership with Jonas Chickering in 1823, which partnership was dissolved two years later. In 1829 John Mackay became Chickering's partner. The instruments of that

firm and their successors were noted all over the United States as most durable, and for possessing great musical capacities. They were prolific in inventions. In 1837 they constructed a square piano with a complete iron frame, with the exception of the wrest-pin block, and afterwards they followed the same system in grand pianos. Their grand pianos at that period were unsurpassed by any foreign make.

The principle of using iron frames had been previously (1825) invented by Alpheus Babcock, and by Conrad Meyer of Philadelphia, and owed its origin probably to the climatical conditions and changes of the country. An event of the greatest importance is the construction of an upright piano by John Isaac Hawkins, an Englishman, in Philadelphia in 1800. This upright piano was constructed with an iron frame, was braced with iron rods and had a metal bridge. The statistics of the history of arts and industries of the United States in 1829, show that 2500 pianos were made during that year of the aggregate value of $750,000. Of these pianos 900 were made in Philadelphia, 800 in New York, 717 in Boston, the balance in Baltimore and minor places. In New York piano making received an impetus from emigrants of families of piano makers from Germany and England, the foremost of whom were the Geibs, Nunns, Kiersing, Dubois and Stoddard: they all followed the English system. One of the first piano makers in Baltimore was Hiskey, who constructed his pianos on the Vienna principle, namely, having the tuning pins above the keyboard, a sounding-board extending over the whole instrument, and an iron plate which held the hitch-pins for the strings. He also applied four or five pedals to his square piano in order to produce the various orchestral effects, so much desired at that time in Europe.

Baltimore, on account of its geographical position, became the chief center for the sale of pianos to the Southern states, and became early noted for the construction of excellent pianos. Foremost amongst its early makers Gaehle may be mentioned. Although built on the German system, contained the English

action. He formed a co-partnership with Knabe under the name of Knabe and Gaehle in 1841. After their dissolution Knabe continued the manufacture of pianos, and built up such a demand for his instruments in the Southern states, so as to counterbalance the progress of the Chickering's in the East. Knabe deserved his success, for he zealously labored to improve his instruments.

While Baltimore and Boston in a great measure monopolized the piano trade of the United States, New York, although it had such piano makers as Bacon and Raven, Stoddard and Dunham, Nunns and Clark, occupied a very subordinate position, which continued until the establishment in business of a family of pianoforte makers from Germany in 1853, namely the Steinway family.

Since the invention of the pianoforte in 1709, it has undergone many changes and many improvements have been made in its construction. But notwithstanding all these facts, a careful examination of the modern pianoforte will develop many defects in its intrinsic musical properties. Unlike the violin, 'cello or the human voice, the piano does not possess the power of unlimited tone prolongation. It furthermore manifests a certain monotony in its tone nuances. In comparison with the voice or stringed instruments, its tone appears cold and unsympathetic. Its tone being produced by the stroke of a hammer, naturally dies away nearly as soon as it is created. It is not within the limits of the hammer to modulate each tone, and the performer, unless he is an artist, can hardly overcome this natural tendency of the hammer. In fact, the natural condition of the pianoforte is such, that its tones cannot be increased or decreased like the tones of the voice, and therefore does not respond to the requirements of true artistic musical nature and therein lies its greatest innate deficiency. With the deficiencies herein mentioned, the piano remains the predominant instrument of the age for the following reasons, unlike the violin and the human voice it serves to produce a complete harmony by reason of its unlimited tone-compass, comprising the lowest bass tone of the contra basso and the

highest tones of the piccolo flute, thus can be used to reproduce orchestral compositions by one performer only. Furthermore, on account of the producing of sound by means of hammers, the piano possesses certain dynamic elements, which in the orchestra, are attained by means of kettledrums, basedrums and cymbals and in the more refined parts, by means of brass instruments. This dynamic element produces a certain feeling of rest on the nervous constitution of the piano player, and thereby, he is enabled to continue at his task longer than at any other instrument.

Aside from the action, the most essential part of the piano is the construction of the sounding-board, the soul of every musical instrument. The tone of the pianoforte depends upon the movement and variable pressure of the strings at the point of contact with the bridge by which their vibrations are conveyed to the belly or sounding-board to be intensified by the vibrations of the fibres of this elastic support. It is to be regretted that the science of acoustics furnishes no fixed laws for the construction of a toneful sounding-board, but leaves it to experiments only. The difference in the character of tone of pianofortes by different makers depends very much upon variations in the proportions, direction of the grain and burring of the belly.

Aside from both action and sounding-board there must exist other requirements in the construction of the piano, which lend the instrument a singing and soul inspiring tone, one that can express all the sensations of the heart, the lyric, tragic and pathetic moods.

While there have been no improvements made during the last two centuries in the construction of the violin and other kindred stringed instruments, it has been the aim of pianoforte builders during that same period to excel each other and to produce an instrument more perfect than any other heretofore known.

As before mentioned, New York, the metropolis of this country, up to 1853 occupied a subordinate place in the production of

pianofortes. It received its first impulse in that direction through Henry Engelhard Steinway and his sons Charles and Henry, and later on, by his sons William and C. F. Theodore.

These manifold improvements made by the firm of Steinway in the building of pianos, have given their instruments certain virtues and powers never before possessed by instruments of other makers. Through their efforts the defects in the construction of the piano hereinbefore mentioned have been greatly eliminated. Formerly only the greatest artists were able to produce on the pianos of that day rich and sustaining tone colors. Now even the amateur and unskillful performer on a Steinway piano can produce such effects as were formerly not even dreamed of.

Although about fifty patents have been granted to Steinway & Sons for improvements in the art of pianoforte making, it will be interesting to mention only the following most important ones:

Overstrung Scale, Patent No. 26,532, December 20th, 1859.

Tubular Action Frame, Patent No. 81,306, August 18th, 1868.

In Uprights and Grands, Patent No. 93,647, August 10th, 1869.

The latter two patents were granted for an ingenious invention to strengthen the hammer apparatus, and to prevent its warping, due to atmospheric influences.

Duplex Scale, Patent No. 126,848, May 14th, 1862.

An invention to control and utilize the acoustical properties of piano strings. By its means a rich, sonorous, and pure tone quality is produced.

Capo D'Astro Bar, Patent No. 170,647, Nov. 30th, 1875, in Grands.

By means of this invention, the suspended wrest-plank can neither be raised nor depressed by the great tension of the strings. Although this patent was granted for Grand pianos, it has been adopted for the construction of Upright pianos also.

Bent Rim Cases, Patent No. 204,106, May 21st, 1878.

By this new method, the case is thoroughly strengthened, and

in no way yields to the immense strain of the strings, while at the same time, it allows free vibration of the case and rims.

Most all these patents emanated from the inventive genius of Theodore Steinway. He was born in Seesen, Germany, in 1825. He received his first instructions in the building of stringed and keyed instruments from his father. He devoted all his energy to the improvement of the pianoforte, and his success in that art is fully described in a letter written by Liszt in 1883, which reads as follows: "Your new Grand piano is a glorious masterpiece in power, sonority, singing quality and perfect harmonic effects, affording delight, even to my old piano-weary fingers." He died, 65 years old, in 1889.

His nephew, Frederick Steinway, who devoted himself under the teachings of his uncle, Theodore, to the scientific researches of acoustics, has also added important inventions to the strengthening of the piano, which consist particularly in an ingenious combination of resonant metal framings, which, in their normal condition, give both strength and a special tone color to the instrument.

Henry Ziegler, another nephew of Theodore Steinway, also served his apprenticeship under his uncle, and has enlarged the field of the Steinway system of piano-building. He is both a theoretical and practical mechanic, who has ventured upon the yet unexplored field of giving the sound-board scientific formation. Henry Ziegler and Frederick Steinway, working in conjunction, have imparted to the Steinway pianos those musical characteristics which make it famous to-day.

Although the piano in its present state may appear perfect to many, yet it is capable of being still more perfected, and it is earnestly hoped that the genius of improvement which has changed the simple pianoforte of Silbermann into the modern Grand, may not rest, but may continue on its march of progress.

THE RENAISSANCE OF
JOH. SEB. BACH'S METHOD
OF PLAYING THE CLAVICHORD.

IN the winter of 1840 Liszt came to Leipsic for the first time. The emporium of the German book-trade at that time was no longer Goethe's "Klein Paris." For, at that time, it represented the predominant centre of German music, the stronghold of the Romantics. It was the Leipsic of Felix Mendelssohn, the Leipsic of Schumann.

Liszt, at that time, was at the zenith of his virtuosity. Memorial coins proclaimed his renown. Their inscription was "Nostri saeculi clavichordi orpheus!" In Leipsic also, as everywhere else, he caused showers of applause. Artists and people revolved in a Liszt-turmoil. The leader of the first was no less person than Felix Mendelssohn-Bartholdy. Using a characteristic expression of Beethoven, "Liszt's playing infused holy fire into the soul of Mendelssohn, whose great artistic mind was at all times impervious to narrow-minded feelings of envy."

Such a musical festival as at that time Goethe's excellent friend, Felix, gave in honor of Liszt could only be arranged by a Mendelssohn. They were without exception compositions unknown to the guest, that were brought to the attention of Liszt. It is a matter of the utmost significance that Mendelssohn could not conceive to offer to this celebrated man known as the greatest pianist of the nineteenth century from all his talents anything higher, grander and more appropriate than the, at that time, completely unknown work of a long forgotten composer, the grand D-minor concerto for three pianos by Johann Sebastian Bach, composed in 1730.

Ferdinand Hiller and Felix Mendelssohn were the performers; at the third Grand, Franz Liszt himself presided. Schumann has

written a report concerning this greatest mark of respect to the genius of Bach. For, was there anyone more gifted to write a criticism of such an artistic festival than an artist himself, and moreover an artist like Robert Schumann? It is contained in the twelfth volume of the "*Neuen Zeitschrift*," where anyone may read it. Like mostly everything written by Schumann, it offers even to-day, after the lapse of more than half a century, a full enjoyment of things gone by.

That marvelous time of that early period is repictured in it. That time when German politics were so insignificant, but German Art was so great—great in its own creations and perhaps still greater in the reawakening of the creator of harmony, the great Sebastian Bach. Next to Zelter we have to thank the enthusiastic propaganda of Mendelssohn for this artistic feat. It is forever inseparably connected with his name. Characteristic enough for Mendelssohn himself, whom a mind like Hans von Bülow has distinguished by the words: "The greatest form genius since Mozart."

During his whole life Mendelssohn adhered to his active veneration for Bach, which was permeated by the noblest passion. His advocacy of the old master proved most effective at the great national music festivals of the lower Rhine, where Bach was hardly known by name.

Mendelssohn in January, 1838, writes as follows to the committee in Cologne: "It appears to me more important to have one number on the programme this year by means of which this festival distinguishes itself from others, and whereby, perhaps, a step in advance can be pointed out. For this purpose I consider it indeed necessary to include the name of Sebastian Bach in the programme, even if it only be a short piece; but it is certainly in time that at these festivals, to which Handel has given so much renown, also that other immortal master, who in no sense stands below any other master, but in many stands above them, should no longer be forgotten. The same objections that may now be

raised against Bach must have existed in former years against Handel's works. Because, if once one of his works is produced, it will not be difficult to find it beautiful and to produce it again. There must be a beginning."

And in the same manner as Mendelssohn at these great national music festivals on the lower Rhine reinstated the German old-master victoriously into his rights, he conducted with untiring enthusiasm at all points his great contest for the Renaissance of Bach, the battle of the artist for the artist! And he only rested when the accumulations of oblivion were completely removed from this indestructible memnoncolumn, which had so wonderfully heralded the future dawn of German classical music by its divine sounds.

Five years before his death, Mendelssohn had the pleasure to behold the unveiling of the monument of Sebastian Bach, the magnificent old "Perückengesicht" (wig-face) as he often called it (1842), and the costs of which he had earned by his own playing. Already two years before that time he had arranged an organ concert in the Thomas Church for that purpose. He gave it "solissimo," and had practised for the same for many weeks with the greatest diligence, so that, as he expresses it in a letter to his mother "he could hardly stand on his feet, and only executed pedal passages on the street."

Less, in fact hardly known, is the extraordinary influence which Mendelssohn's father exerted on these efforts of his son. The time will come which will deal more explicitly with this excellent man, who in his altogether too great modesty is totally eclipsed by the greatness of his father, the philosopher, Moses Mendelssohn, the glory of his son Mendelssohn Bartholdy.

Since that time fully fifty years have passed by, and with the great master of the Romantic, the old Sebastian survives to-day in all his power and glory. In fact it may be stoutly maintained that Bach now really begins to live, and with him and depending upon him without being limited in time, the elements of true and genuine art will continue to all eternity.

Before his surpassing greatness all those who came after him now bow down.

Weber maintains boldly that the Classics admit the following about Bach: "That Mozart never would have risen to his greatness without the stairs built by Bach."

Another expression of Weber's which is more dogmatical and of more significance for our theme we wish to annex here. "The art to play Bach's compositions effectually has been perhaps completely lost, inasmuch as the enjoyment to be expected therefrom neither lies on the surface nor, because on account of the richness of the harmonic construction, the outer melodious contour can appear so prominent as is desired by our spoilt ear." The earnest movement which tries to produce at present Bach's works in their artistic interpretation may be termed in these words of C. M. von Weber. It represents in the present also one of the most interesting questions of art on which subject Spitta in his unsurpassable Bach Biography in truly wonderful manner has said: "Bach's clavier compositions represent an inheritance which was destined to be accepted by us Moderns in its full scope, as an inestimable present for a period whose musical Spring does not flow any more in its former profuseness, an unmovable rock in the turbid commotion of passionate aberrations, and for all those who are still able to hear an earnest admonition not to forget the dignity of art!"

I found a very noticeable indication of this question of art in a letter from Mendelssohn Bartholdy's father, who in 1835, wrote to his Felix, to Düsseldorf, as follows:—"Your intention to restore Handel in his original form has caused me to reflect on the latter instrumentation of his works. Generally the question arises, whether Handel, if he would compose to-day, would not use all the musical means of the present day for composing his oratorios, which, in fact, means nothing more or less whether that artistically moral form to which we give the appellation Handel, would assume to-day the same outer form which it has had one hundred years ago, or, in an enlarged meaning, whether the world appears

to-day as it has appeared one hundred years ago. This question answers itself. The question, however, must be put in another way, namely, whether Handel to-day would compose oratorios at all? Well,—hardly, if they must be written to-day, as has been the fashion lately. From what I say to you, you can learn how confidentially and relyingly I foresee your work, which without doubt will solve the question of uniting old thoughts with new methods, otherwise no result would be effected, in the same manner that the painters of the nineteenth century would only make themselves laughable if they would represent the religiosity of the fifteenth century with long arms and legs, and with a perspective placed on the head. To me these new means, as also everything in the world seems to have come at the proper time, in order to support these inner motives that are growing weaker, for at the height of the religious sense at which Bach, Handel and their contemporaries are found, they certainly needed no orchestra for their oratorios."

These certainly very noteworthy explanations of the banker Mendelssohn lead directly to the question of art indicated above. I shall, however, later on find occasion to speak of the striking contradiction by the preraphaelitish school of painting of the final remarks relating to the paintings of the fifteenth century. The repeatedly stated question of art "is the reproduction of Joh. Seb. Bach's clavier compositions by our modern artists completely congenial?" remains the subject of our consideration. I do not believe that this can be answered with yes without some reservations.

For whatever relates to our modern reproduction of Bach's clavier compositions, it must be admitted that hitherto the strictest historical research has not been able to become closely allied to the same, even if attempted by our greatest virtuosos. The student of Bach must absolutely pre-suppose that the most numerous clavier compositions of the old master were written for the clavichord and cembalo, and that the clavichord especially was the

instrument to which Joh. Seb. Bach assigned a quite distinguished preëminence before all other keyed instruments of that time. This predilection of Bach for the clavichord must be still more considered as of great importance, because we know it to be a well established fact that the master, during his whole life was accustomed to ask in relation to his instruments for many very far-going requirements, and even such that could only be satisfied with difficulty. In Arnstadt and Mühlhausen, in Coethen, Weimar, also in Leipsic, in fact everywhere, the different church organs gave him a great deal of trouble. He nowheres finds an instrument whose capacity reaches the level of the artistic sensitiveness of his artistic craving.

The records of Bach's complaints on this subject are still in existence. They teach us that Bach had more than anyone else penetrated the spirit of organ building and that he not only understood how to criticise, but moreover could demonstrate and order how to obviate the deficiency and error. Thus the records of the free city Mühlhausen, in 1708, contain the following: "The new organist, Mr. Bach, has reported different defects in the construction of the organ in the church of St. Blasius, and also has handed in a written plan how to remedy the same."

Yes, according to the records of the Liebfrauen church in Halle, Bach all alone conceived the plan for building a new and grand organ, which the celebrated organ builder, Christof Cuntius, had acknowledged through his own signature as lawfully proper for making, and which he in fact contracted to build for the price of 6,300 Rixthaler.

Can anyone therefore wonder that the University of Leipsic in 1717 sent extra for Bach while in Coethen, in order to have him thoroughly examine the new organ of the Pauliner church, in presence of two witnesses only?

In the use of stringed instruments Bach did not demand less requirements. It is well known that he himself played the viola, and thereby enjoyed amongst his fellow-players the freest super-

vision over the execution of the different parts. Thereby he made the unpleasant discovery that not one of the cellists (Viola de Gambists) was adequate for the execution of his figured Bassos. According to some anecdotes such deficencies were often very apt to cause a serious unpleasantness to the delinquent. For in everything that pertained to art Bach possessed a devilish hasty temper, and it is related that he sometimes tore his mighty wig from his head in order to hurl it against that of a stupid pupil. Certainly such an insult he could not give to his cellists, especially as he knew too well that the fault in this case was not of the player, but was due to the size and construction of the violoncello of that time. It is now noteworthy and very characteristic for our description, that Bach knew most thoroughly to obviate this difficulty through the invention of a totally new stringed instrument, the "viola pomposa."

Bach, in questions pertaining to the spirit and reproduction of his works, was not only not conservative, but moreover really revolutionary, and thus, besides other technical accomplishments, he is credited with the invention of a musical clock and of an improved keyed instrument, the so-called Lautenclavicymbel.

Therefore, it can be maintained with apodictic certainty that Bach was always accustomed to claim the highest pretensions in regard to the capacity of all instruments used by him, and that he had without doubt weighty artistic reasons for preferring in such a distinguished way the clavichord for the execution of clavier compositions. The reasons for this embrace in the first place, the fact that the clavichord must by no means be considered as a primitive precursor which is subordinate to the later constructions of keyed instruments. In fact it demands a prominent place in the line of all piano instruments even to the present time, not only as a keyed instrument of quite peculiar tone productiveness, but more especially on account of its unique tone color and power of inspiration.

These matters, however, have been explained at length elsewhere in this work, and therefore it is sufficient to remark here, that accordingly the method of playing the clavichord can exhibit a whole array of very important and distinguishing differences from that of the Hammerclavier, and completely from the method of playing the modern pianofortes. In order to illustrate this fact by a few examples, I would like to remark that at the clavichord, the feeling of the player is more capable of being carried out, for the reason that the different degrees of the intensity of the touch, find expression not only in the power, but also in the song-like pitch of the tone. Certainly the pitch of the tone forms itself by the striking of the tangent against the string. But in the same manner as on the violin, the accent of the player increases the pressure on the finger-board, if the tangent rises higher, then the string extends itself and thereby produces that trembling, chromatic, echoing sound, to which even the modern ear cannot deny the oscillating property of a deeper soulful sensation.

Therefore there cannot be any doubt that in this respect alone we run across a technic which has been lost, and whoever has heard one of our virtuosos attempt to play the clavichord understandingly, must at least admit that this technic is very capable of being resuscitated. In fact, this superb responsiveness of the clavichord has encouraged a great number of attempts of production, which cannot be attained on any other instrument. These naturally are completely lost as soon as any attempts are made to produce, unconditionally and without consideration on other keyed instruments, compositions which are written for the clavichord. Otherwise, in order to introduce another reason, we assert that the legato-bows in Bach's clavichord works have quite a different significance from those in modern piano-playing. Because legato-playing on the clavichord can only be accomplished by an increased pressure of the fingers, and thereby a crescendo is always caused.

Therefore Bach's legato-bows signify always a sign of expression for the performers.

At every step, however, we meet such differences. What, therefore, is the natural consequence? None other but that the interpretation of Bach on his contemporaneous keyed instruments must lead to essentially different musical sound effects and sound mixtures from those that can be attained on the pianoforte. There is no question which of these two may be more instructive.

Is there any necessity in our period of historical justice and seriousness of conception, to enter the arena in order to maintain that Joh. Seb. Bach, "the Orpheus of the clavichord of his period," may demand that he should be studied and investigated on his own most peculiar, favorite instrument?

We must permit the great old master to defend his cause with his own peculiar power, and especially with the means of art and the technique of his period. Far more pressing than in painting, we need in the field of music a peculiar art of restoration, in the same manner as such one has existed for a long time for the plastic arts.

Who will dare to-day to whitewash the dried-up colors of a quatrocento-painter with the chalky crayons of the Pleineair Pallet?

Could anything defeat this æsthetic demand in the field of music, in which the individuality of the composer cannot be appealed from even in the last instance, while in the plastic arts our so much exalted education and capacity of objective viewing may be appealed to?

We are therefore yet far removed from a truly congenial reproduction of Bach's compositions, notwithstanding that historical musical performances have become the order of the day everywhere.

There can be no question that in this study the selection of the instrument is of the utmost importance.

Historical truthfulness and historical justice are therefore the battle-cry which we wish to promulgate in the study of Bach. We behold, all over, the principles of historical study duly acknowledged, yet in all these fields of labor of the mind, historical truth stands firmly as the fundamental principle of true art.

We read the poets of former ages in their original language, in the study of law we go back to the very fountain, we imitate on the stage, and while relating the things of the past conscientiously, their historical conception and shape, even in such things which in the other world is called good and bad in the consideration of the moral itself, we have attempted to use historical criticism. I only remind you of the celebrated rescue of Lucrezia Borgia, by Gregorovicus, therefore, what should deter us so to hear the music of our ancestors, and so to feel it as it appeared intelligible and full of enjoyment to our great predecessors?

The almost incomprehensible successes of the English Preraphaelites, which I have hereinbefore briefly mentioned, can amply teach us what surpassing and infinite vitality to-day still exists in even quite removed and seemingly defeated periods of art, and how they in an astonishing degree can gain the ascendency over modern minds. The school of painting of the Preraphaelites embodies in their efforts, as is well-known, the most unheard of and rudest reaction against every progress in which painting may glory since the days of Raphael and Perugino.

"Smear" the Preraphaelites term everything which painting since the death of Van Dyck had brought forth. Heaven and Earth, Gods and Heroes, everything that creeps and flies, the Preraphaelites behold and clothe with the eyes and conception of the period of Renaissance.

I have watched their conduct for obvious reasons with the greatest interest. The audacity of their artistic religion possesses in fact something imposing from which one cannot easily escape.

They teach that "Raphael is the highest summit of art." They call an attempt to surpass him "to perish without help in man-

nerism." In order to gain the height of artistic labor, we must enquire into its inception; therefore we must go back to Perugino. Before all we must create out of ourselves an ideal, namely our own ideal. Thus the Preraphaelites seek only the beauty which permeates them, the absolute beauty. This battle raged for thirty years, but to-day the Preraphaelites reign with their pure, deep Idealism all over England, over its entire art and the entire nation, and over all that territory wherever only Albion's flag is supreme!

The Renaissance of Bach cannot naturally be exerted to such an extent, and the time is probably distant for the formation of a brotherhood of Pre-Sebastianists. We would severely depreciate such a condition of zealotism in this otherwise sad era of music. Surely the fantastic richness of inmost power of creation and gift of formation which emanates without limit from Bach, must be considered as the triumph of unfettered activity of art. We must not, however, pervert to excess the strictly historical method of studying Bach by foolishly claiming Bach's clavier compositions must without exception be heard on the clavichord. Nothing could be more one-sided and erroneous than such a limitation, which in addition would include a total ignorance of the true substance of Bach's art.

According to the grand researches of Phillip Spitta, it is a well established fact that all clavier creations of Bach were composed for an ideal instrument, which was destined for our times, but the sound of which, like a vision, must have agitated even then with irresistible vocation, the expectant heart of the great old master. These researches explain from these facts, that almost unapproachable bruskness of the character of so many compositions of Bach, and especially the almost horrifying regardlessness of sound, in which compositions Bach manifestly, with complete disregard of their outward appearance, only aimed at the creation of their spiritual worth.

In the beautiful words of Spitta, he is "the excessive idealism

of a German mind, who always looks up towards the clouds without caring whether his feet entangle themselves in earthly thorns."

This pure, spiritual tenor of the Polyphony of Bach appears on no other instrument so unlimited and so clear in its naked beauty, as on the clavichord.

The peculiar effect of sound of the latter, which conduces to only very modest perceptions of the senses, permits, however, in its stead a deeper insight in the worldless strife and labor of tones, if I am permitted to say it, in the status nascendi of polyphonic art itself, in which the voices ascending and descending finally form a tone palace.

There is only one completely satisfactory course to attain analytically a full understanding of Bach's art, namely to study Bach on the clavichord. Here we can see the whole chemism of complicated connection of sound effected in full purity; the molecular powers of harmony, the affinity and allied breaking through of sounds. It is easy to fathom this great spiritual development of polyphony with the extraordinary richness and abundance of tone of the modern piano. The sensual nervous enchantment of sound harasses too much the grasping of the mind, we listen too much to the effect of the volume of sound on the ear, but the motive powers that reign supreme and cause all this, remain invisible.

We are too easily induced to search for the effect on the surface in purely accidental harmony, in coloristic effects, which are however only side issues, and therefore the warning cry must again be raised to confine yourself closely to the clavichord for the study of Bach. Only after one has gained on the clavichord a full understanding of his polyphonic architecture, can he attempt to paint the clavier compositions of Bach with the shining colorit of modern piano music. And then only will be disclosed the whole wonderful beauty which filled the master's imagination. We hear more distinctly the sound of the bells from the deep, and clearly the forms from below send their greetings.

ARTICLE OF DR. HIRSCHFELD,

VIENNA.

A TREATISE

ON THE

M. STEINERT COLLECTION

BY

DR. ROBERT HIRSCHFELD,

PROFESSOR OF MUSICAL AESTHETICS AT THE VIENNA CONSERVATORY.

Taken from the Vienna "*Presse*," July 30, 1892.

STEINERT'S PIANO COLLECTION.

Whoever wishes to study the development of the piano from its earliest beginning to the most noble productions of modern technique, not, however, in dry words and dead pictures, but in resounding and well preserved exhibits, will find in Steinert's collection, which stands next to the English department, full satisfaction and a rich artistic enjoyment.

The owner has brought more than 25 keyed instruments, the fourth part of his precious, splendidly arranged collection at great cost from his residence in New Haven, near New York, to Vienna.

The result, however, amply repays his efforts, for Steinert's collection is a most prominent ornament of the exhibition. His department has become for a long time the resort of earnest investigators and a favorite studying place for lovers of music, whom Mr. Steinert regales with great liberality by a pleasing exhibition of these instruments and beneficial lessons of their interesting construction.

The collection is closely related to its owner. One cannot picture Steinert, the lover and excellent judge of old instruments without his old pianos, with which he lives continuously in spirit and in practice; but the collection itself finds in Steinert not alone its well-versed guardian and custodian but also its necessary complement, because he knows unlike any other to bring forth the tone from the old clavichords and harpsichords and he resuscitates with wonderful skill, deeply entering the art of the former generation, a long lost technique of playing.

Whoever hears how Steinert, with delicacy and artistic knowledge, colors the clavier tone of the oldest instruments and wonderfully modulates the same, falls in love immediately with the old plain looking boxes that represent the clavichord, and loses himself in an enticing romance of sound as far as the sense for sound, which is far distant from the noise of tone of our times, can be awakened in him.

The tradition of the good old city musician (stadt musikant) still lives in Steinert. As a son of a peasant, he enjoyed in his earliest youth in a small city in Bavaria the popular instruction of a well meaning city musician in the playing of all possible instruments; for that reason none of them seem strange to him to-day and he is most at home on those which are least known to-day. He who is now the representative of the famous piano factory of Steinway studied and practiced before he emigrated as a boy on a very old clavichord, the patriarch of our pianos.

Numbers 1 to 5 of the Steinert collection exhibit old clavichords, square cornered bodies without legs. The levers of the keys rest in their middle part on a pin and strike at the rear end with a metal tongue against the metal strings, which are strung above the same. Their mechanism is the most simple imaginable. The metal tongue is called a tangent, because it touches the string, and for that reason the clavichord is also called the tangent piano. Four clavichords of the collection are gebunden or fretted, because three or four consecutive tones are produced on one string, so that the instrument contains many more keys than strings. No. 5 is free from this condition. In it a particular string ("bundfrei" or unfretted) belongs to each key. It is said that the organist, Daniel Faber, invented the latter instrument in 1725. Immediately, then, the necessity arose to deaden the shorter part of the strings of the clavichord. This was done at that time, according to Sebastian Vivdung, by inserting small pieces of woolen cloth between the strings. "This frees the strings from rattling and from the coarse, unpleasant reverberations, so that they do not continue to resound." The tone of the clavichord is thin, but not without charm. Therefore Dr. O. Fleischer says with full right in his instructive catalogue of the Berlin royal collection of instruments: "If any one lends his ear after isolating the same from the massive sound of modern musical instruments to this naive sound, he will very soon find it very charming. It is most decidedly adapted to attract the attention of the listner to the utmost. While the full tones of our hammer pianos especially attract the senses, one can justly describe the tone of the clavichord as purely spiritual. This characteristic is not only lovely, but also strictly true. This spiritual con-

dition of the clavichord manifests itself in its peculiar adaptation to polyphonic playing. Chords sound like glass, but the intermixture of independent harmony is of unspeakable charm. It is an instrument that urges improvisation, not, however, to empty humming of sounds, but to the deep combinations of living, trembling voices. Mr. Steinert has again acquired the old technic of playing the clavichord, he shows in his tuneful improvisations that the player of the clavichord like the violionist has full power over the lightly stretched strings, that in each string there lives and trembles a susceptible soul, which can proclaim mourning and joy, or in the words of Hans Hayden of Nuremberg, "And although the text cannot be expressed by words the player can make known his feelings, whether sad or joyful thoughts animate him, by the courageous or timid manner with which he attacks the clavier." Mr. Steinert plays on the clavichord, *ex improviso*, with the deepest expression to the elevation of the senses of the listener, recitatives, as can be found in the chromatic phantasy of Bach. The tone of the instrument is in the hands of Master Steinert of astonishingly long duration. We learn to understand that the clavichord, which permits singing and shading, was indeed the favorite instrument of Johann Sebastian Bach.

Moreover, Philipp Emanuel Bach admonishes that if any one plays continuously on the quillgrand he gets accustomed to play in one color, and the different touch, which only a good clavichord player can produce on a grand, remains hidden. Mozart yet used a clavichord, and the instrument in the exhibition in the Mozart department, erroneously termed a traveling spinet, is in fact a clavichord. Whoever, under the skillful guidance of Mr. Steinert, examines his collection will tear himself away with difficulty from his clavichords. Mr. Steinert loves them as a father loves his good children. He has adopted these foster children when they were in a neglected condition; he has newly dressed them and brought them up with great care. Many a clavichord in the exhibition whose strings are wanting and whose keys are broken and for which, neither through flattery nor the rough pressure a tone can be produced, seems to yearn after a foster father like Papa Steinert.

We next advance in this learnedly arranged collection to the spinet (No. 6.) The instrument dates from the beginning of the seventh century and was built by John Hitchcock in London. The spinet derives its name either from the supposed inventor, Spinetti, or from spina (a thorn.) On the end of the key lever you find in it loosely attached a jack (a small wooden stick,) from whose side protrudes a pointed elastic thorn, the spina. At the

striking of the key the jack jumps up in a straight line and the thorn, usually cut from the quill of a feather of a raven, plucks the string. The tone of the spinet is chirping, more powerful and more intensive than that of the clavichord, but not as pliable. In the spinet the strings lie like as in the clavichord, obliquely to the direction of the keys, but in a more advanced phase of progress. In the clavicymbel, also called cembalo, quillgrand and in English harpsichord, the strings are stretched in the same direction of the keys. The clavichord has, therefore, the keyboard on the larger end of the body, while the harpsichord, in the form of modern grands, has its keyboard on the shorter end. The harpsichord is also provided with a resting frame and legs, which were for a long time wanting in the clavichord and spinet and which were placed, when used, on a table. Soon afterwards, in order to produce different tone coloring in all kinds of changes, various stops were added to the harpsichord and clavicymbel, whose description would lengthen this article too much and which can be read in the catalogue of Dr. Fleischer, herein before mentioned. The collection of Steinert includes a harpsichord, newly purchased and not yet repaired, by Couchet of Antwerp in 1679 and also in No. 7 a harpsichord by Jacobus and Abraham Kirkmann, 1776, London, with three stops. Kirkmann, whose real name was Kirchman, was a German, who emigrated to London, and who there founded a harpsichord factory. The harpsichord No. 8, also built by Jakob Kirkmann in 1755, has leather tangents instead of quills and consequently has a softer tone. Here it may be remarked that England produced harpsichords, but no clavichords, which were indigenous to Germany and Italy.

One generally calls the tone of the harpsichord, because the thorn does not strike but merely plucks the string, soulless, but whenever Master Steinert through attentive listeners is inspired to the true mood, he knows how to play the harpsichord with such expression that we obtain a clear insight of the skill of the old masters.

No. 9 of this instructive collection brings us to a great progress, to the Hammerclavier (pianoforte). The Italian Christofori is called the inventor of the modern hammerclavier. The new system is discovered, however, in the beginning of the last century almost simultaneously in different places. Models of the hammer mechanism of Christofori can be seen in the English division of the exhibition. They are already astonishingly perfect and complicated. The celebrated Gottfried Silbermann takes a great share in the improvement and introduction of the hammer mechanism; in fact, every German piano maker, even talented school teachers and organists, have added something to its improvement from their own ingenuity, and, the

old forms for this reason, as shown by Steinert's collection, are so diversified and individual that their continuous development cannot be easily followed in one direction only. The hammer piano No. 9, made by John Frederick Julius Schneider in Nuremberg, has bare wooden hammers, not covered with leather, without means of release; that is, the hammers, after striking, return to their respective places by means of their elasticity, and not by means of any mechanical contrivance. This instrument has five octaves and still adheres to the clavichord form. A strip of leather can be carried as a sort of sordine of the tone by a register under the strings. Especially noteworthy are the independent dampers which are connected with every single hammer. The hammer piano No. 10 removes itself in its form from the clavichord character, only the tuning place on the right hand side recalls the clavichord, the mounting of the strings and the method of the striking of the hammers carry back the form of the spinet. Thus as the features of our predecessors are depicted in the faces of their grandchildren, old forms recur always in different instances in new instruments. The hammer piano No. 11 points to John Chris. Jeckel (Worms, 1783). The frame resembles the clavichord, but in distinction to No. 9, in which we find a separate damper for each hammer, the damping here is done by a strip of cloth that is extended over all the strings. In the mechanism of the hammers the maker manifests himself as the predecessor of the so-called Vienna mechanism of Stein, who makes the hammer strike the string in front in the direction of the keys. The English mechanism lifts the hammer in front, so that it hits the string in the rear in an opposite direction from the keys. The hammer piano, No. 12, by John Broadwood, about 1771, exhibits the latter system. The hammer is raised in front and strikes in the rear. Christofori has used this system for the grand piano. Silbermann adopted the same. Zumpè, a German, however used it for table-form pianos and introduced the system in England, where it became prominent for the English school. This piano is tuned on the right hand side, like the clavichord. Also No. 13, with Zumpe's mechanism, without any release to the hammer (see above) and three registers, is tuned like the clavichord and has a clavichord frame. The instrument No. 12 previously mentioned, because of English origin, shows the spinet frame, especially since only spinets and harpsichords were made in England. Very remarkable is No. 14, an upright hammer piano, dating from the midst of the last century, in respect to the mounting of the strings. The strings, to the astonishment of mechanics, are not strung vertically, as one might expect from its upright form, but horizontally. The hammer has means of release, that is, it has scarcely

touched the string when by means of a certain mechanism it is liberated, so that it can return to its resting place.

No. 15 shows John Schantz, as exponent of the Vienna hammer mechanism. No. 16 again leads us to England. The hammer rests independent of the keys over them on a separate strip of wood. The piano by Culliford, Rolfe and Barrow has mechanism to drop the hammer after striking. Short mention is made of No. 17 from the year 1825, and No. 18, an English piano. No. 19, made by Babcock, is distinguished for its elastic, beautiful tone; also No. 20, coming from New York. No. 21, from Baltimore, has a fagotte, forte and celeste register, also a pedal for Turkish music. Conspicuous by reason of its soft, noble silvery tone is the grand piano No. 22 with black lower keys of five octaves. The heads of the hammers in it are not made out of wood, but are formed by a pasteboard ring, which produces this wonderful softness of tone. The collection of Mr. Steinert's embraces in No. 24 a very interesting concert grand marked "Nannette Streicher née Stein." This instrument gives rise to many reminiscences. We remember the jolly visit of Mozart at the house of the celebrated Andreas Stein in Augsburg, the enthusiastic report of Mozart of the Stein pianos and the mischievous, comical criticism which tore to pieces the piano playing of Nannette Stein, then eight years old. Thus his criticism of October 24, 1777, begins: "Whoever hears and sees her play without laughing must be a stone (stein) like her father." Later he adds, "she may improve," and in fact she became a lady of high cultivation, a splendid artist and a thorough judge of the art of piano making. After the death of her father she herself assumed the management of his factory, and after her marriage with Streicher, the friend of the youth of Schiller, she directed in Vienna the newly erected piano factory without neglecting the duties of a good housewife and mother. It is also known that this talented woman proved herself a faithful supporter and friend of Beethoven at a time when he in most reduced circumstances did not possess one decent coat, but not even a whole shirt, and when friend Schindler found occasion to depict Beethoven's condition in its true state, Mrs. Streicher (this happened in the summer of 1813) repaired Beethoven's clothes, brought order into his household, bought the most necessary articles, exhorted him to be saving, and, most wonderful to relate, Beethoven obeyed in everything.

In No. 25 we admire a rarity, an upright Stein grand, which bears, being built in 1779, the celebrated name Stein. With a glance towards a modern curiosity, a streich (bow) piano, which imitates the tone of bowed instruments, we bid adieu to the instructive collection of Mr. Steinert.

This collection delights us as the achievement of an unselfish desire dedicated to art and the knowledge of art, as the result of a zeal of collection directed by perfect knowledge of art during a period of thirty years. It furnishes instruction through the mouth of its communicative experienced owner and through its arrangement, such as we cannot gain by means of the thickest books. It furnishes enjoyment through Master Steinert's beautiful improvisations, which he knows so well to adapt to the times and the style of the instruments of those days. Mr. Steinert has exhibited, at great expense to himself, his collection to a number of American universities; he has also brought his valuable instruments, which he himself has skillfully repaired, and which he keeps in first-class condition, to Vienna. He finds his reward for his labors in the fields of art, in the great interest in the recognition of experienced, learned, knowledge-seeking visitors.

ARTICLE

FROM THE

"AUSTRIAN NEWS OF MUSIC AND DRAMA."

(MUSIC-ZEITUNG,) VIENNA.

THE HISTORICAL DEVELOPMENT

OF THE

PIANO-FORTE.

From the "Austrian News of Music and Drama," Vienna, August, 1892.

"If a professional musician strolls through the magnificent exhibition he beholds with astonishment the great collection of musical instruments that have been sent here from the art museums of all countries. It almost appears like as if a pilgrimage of instruments had taken place to the Mekka, to this temple of art, under the majestic canopy of the rotunda pointing heavenward.. Here, for the first time in the history of music, we find united in peaceful harmony the most hidden treasures that for centuries rested in deep solitude—instruments of all nations that all at once as by the touch of the magician's wand have been transported to a new world. All these wonderful treasures were resting in quiet concealment in museums and cells of monasteries, their faces were covered with the black veil of silent stillness of the grave, although an ideal soul life slumbered in them. Where are the sweet sounds their maker in days gone by could breathe in them; what has become of the mechanism that formerly lent life to the work ?

The keys that once served the player to entice living tones from the lifeless instrument have grown yellow, and the strings once full of melody are eaten away by modern rust.

Suddenly there appeared like a superterrestrial fairy the art-loving Princess Pauline von Metternich, and her magic call awoke them all from far and near to one great union, to a magnificent ascension. And thus we find now here in this exhibition the art historical collections of instruments of the imperial House of Hapsburg, of the princely family Esterhazy, known for its devotion to art; also those of many archdukes and notabilities of the Austro-Hungarian empire; also the wonderful collection of the house of Rothschild, the precious treasures of art of the German empire, the private collections of the Queen of England and the Prince of Wales, etc., and the

extensive collection from Great Britian. Also France, Russia, Spain, etc., are represented here. Also the treasures of the musical and singing societies of Vienna, especially valuable in a historical sense, amongst them the original instruments of composers and musicians such as Bach, Händel, Haydn, Mozart, Beethoven, Schubert, Mendelssohn, Chopin, Schumann, and such composers as Donizetti, Meyerbeer and others. Worthy of consideration are the private collections of the active Mr. De Witt from Leipsic. Full of wonder we stroll from one collection to the other and our eye feasts on the instruments that are beautifully decorated with pictures, whose outer appearance has been enhanced by the painter's skillful hand, until we suddenly arrive at a point which we may consider as the terminus of our journey. What does this place contain? Is it ancient Rome, or Greek Athens, which as the celebrated homes of ancient art sent us treasures? Is it the repository of a monarch or the collection of a European museum? No, it is none of these: it is the contribution of a new country; it is young America that sends us treasures, namely the property of the art patron, M. Steinert from New Haven.

When the call of the Princess Pauline von Metternich was first issued to all people of the earth to send their exhibits to the International exhibition of music and drama it was also heard in America. Mr. Director Heinrich Conried in New York, whose labors in America in behalf of the German dramatic art are well known, was nominated as a commissioner and displayed great zeal in this matter, and he succeeded in obtaining Mr. M. Steinert's consent to send a part of his celebrated collection of old-keyed instruments from there to Vienna.

The collection of M. Steinert contains in its present completeness 100 exhibits of all kinds of keyed instruments, dating from the 13th century to the year 1825. Only the paedagogical part of the collection is now at Vienna, and with it is its owner, Mr. M. Steinert, who understands how to explain these old constructions scientifically, and also knows how to play on them in masterly style, which latter fact is of the utmost importance in the field of former Polyphony and the works of Bach for the clavier, as they were written, as every one knows, exclusively for the clavichord.

(Here follows a description of the instruments of Mr. Steinert's collection with illustrations which is not published for want of space.)

Now it might be of interest to our honored readers to find a few biographical sketches of Morris Steinert in the following:

Morris Steinert, born March 9th, 1831, at Scheinfeld, near Würzburg, in Bavaria, left his home as a young man of 23 years, and emigrated to

America, where he officiated for some time as a violoncellist in the New York opera and also in public concerts. Afterwards he went to the Southern States as organist and piano teacher and married there; and at the breaking out of the war between the North and South, he gave up his position in order to officiate again as a musician in New York.

This work as a musician, however, was detrimental to his bodily health and following the advice of his physician, he assumed a new occupation, which consisted in this; that Mr. Steinert accepted the agency of the celebrated piano factory of Steinway & Sons of New York and other great firms for the New England and Western States. His energetic zeal was quickly crowned with great success, so that he was soon enabled to open branch stores in seven different cities in America, for each one of his seven grown up sons, under the firm name of the M. Steinert & Sons Company.

This piano business is at present one of the greatest and most celebrated in the world.

During his leisure hours the founder of this world reputed firm occupies himself with his beloved art; and as his state of health does not permit him the continuous practice of music, he has given his attention more particularly to the collection of old musical instruments and it can be well said of him, that at present, he possesses the largest collection of old-keyed instruments. Mr. Steinert sacrificed much time and labor and thus, through many journeys through America and Europe, he gained possession of all these precious treasures. But he was not satisfied like the average collectors and museums to obtain these old broken instruments merely for inspection. No! His aim was higher, more ideal. He inspired new life into these old instruments, by means of thorough repairs, and he then carefully proceeded to study gradually their character of tone, in order to be able to play them in the spirit of former times, in which effort he was materially assisted by his wonderful talent of improvisation, so that at present he stands unsurpassed in this highly interesting field. As has been stated before, Mr. Steinert is now a guest within our walls, as a disinterested interpreter of an epoch of art, which was almost believed to be lost. Musicians and friends of art can surely expect an artistic treat while inspecting the incomparable collection of Mr. M. Steinert.

G. KUEHLE.

Vienna, July, 1892.

ARTICLE, "WIENER ABENDBLATT."

THE following article, translated from the German, was published in the *Wiener Abendblatt*, October 21, 1892, some weeks after Mr. Steinert had left Vienna. It depicts the fruits of Mr. Steinert's labors while at the art exposition.

FROM THE ROTUNDA.

The deserted Prater grounds, now rest in the humid dew of the fall morning. Everything appears in fast changing contours, the fields and leaves in the variegated and elegiac colors of withering and decay. The gigantic building of the Rotunda becomes visible through the surrounding fog in shadowy outlines. From the interior of the Rotunda there sounds forth a noise hollow and weird. From time to time it increases to loud hammering and din, until suddenly there can be heard a terrible crash like that of falling walls. After that comes again the noise of drilling, that terrifying music of the work of destruction which is now being carried on in the building of the exhibition. But to view this destruction is still more touching. Over night in a few hours there have been completely destroyed all these wonderful creations of reconstruction and system which learned study and science in conjunction with the architect of the exhibition formed from thousands of single subjects in true historic sense and thought, also all these corners, recesses and fronts which represented the knowledge of art of former centuries; in fact, which reproduced the history of art of entire celebrated epochs. It is indeed a field of battle covered with ruins, but at the same time a field of victory. No matter how high may be conjectured the idealistic ends and purposes of this exhibition, of this united contest and strife, they were obtained even more gloriously; the vast numbers of scientific and artistic treasures, which have been collected here have been made subservient in a still higher degree to a mass of fruitful effects and will be a source of generating activity in these fields hereafter. This applies as well to the whole exhibition as to its individual branches. Especially in the part relating to instrumental music and the exhibition of musical instruments there was offered such a richness of objects and forms, as probably have never been beheld before in such abundance, it may be safely stated that such a large number will not be again brought together in the near future

For example, what power of attraction did the now well known special exhibition of old-keyed instruments for which the celebrated collector and learned musician, Morris Steinert, from New Haven, had united about 40 of his most costly and rare objects exert on the untold thousands of visitors? In contrast to the disposition and arrangement of instruments in mostly all other sections in which other causes rather than system, historic understanding of genetic development determined their disposition, the collection of Mr. Steinert exhibited in the limited field of keyed instruments in the most instructive manner their development from the clavichord to the modern gigantic grand piano. It adds to Mr. Steinert's merit that he himself arranged his collection and his worth may be still higher appreciated when it is considered that his collection is that of a private individual, and that he, without receiving any subsidy, at a great sacrifice responded to the call which was sent to him from Vienna. His collection possesses a most prominent advantage, namely, that all his instruments have been reconstructed and have been put in a playable condition by scientific hands in the spirit and intent of their old builders. Furthermore in his whole collection every single instrument has been discovered and so to speak has been exhumed by its possessor. Mr. Steinert seems to possess in this field a peculiar scent, even in Vienna, where he hardly went beyond the exbibition grounds, he succeeded in discovering in some old attics several valuable old harpsichords, which naturally now are his property. In his special exhibition, however, he did not merely follow the inclinations of an antiquarian. His aims were vastly deeper or to speak more correctly extended to a much higher sphere.

The method of playing on these old-keyed instruments belongs to an earlier period of time. It corresponds especially with the earliest polyphony of playing and reaches its climax, there were Bach's playing attained its first successes. The study of the compositions of Johann Seb. Bach, also of those of the Italian school of Domenica Scarlatti, the fugues of Händel and Ph. Em. Bach, the manners even of Haydn, Mozart and of Beethoven require instruments that produce their tone by essentially different methods than those possessed by the pianos of later periods of a Chopin, Mendelssohn, Thalberg and Liszt.

The romantic of piano playing with all its brilliant variations and the powerful effects of these masters succeeded apparently for a time to push to the background the school of Johann Seb. Bach and his contemporaries. Even if Johann Seb. Bach has been resuscitated during the last fifty years and the works of this great master spirit have gradually resumed prominence, there has not been placed a limit to the thorough study of this divine musi-

cal world of idea, this wonderful art of counterpoint. Mr. Steinert has made the study of Bach his chief task. He was not contented to produce Bach by means of the hammers of the modern piano, whose mechanism and method of playing are intrinsically just as foreign to the method of playing the compositions of Bach as Johann Seb. Bach himself was totally averse to the hammer clavier. With all the fulness of tone of the modern grand it lacks those tender, soft, clinging tone qualities of the clavichord, the instrument for which he exclusively created his mighty works. Therefore Mr. Steinert undertook the task to play Bach's works upon the clavichord, and it was his mission in Vienna during the exhibition chiefly to represent the clavichord as a historical and classical instrument par excellence to the distinguished musical circles and to the numerous visitors of a musical exhibition.

It can be safely said that Mr. Steinert has remodernized the clavichord, not, however, in the sense that it stands in its tone capacity of the 17th and 18 century on a complete level with our modern splendid instruments. He only struggled to regain for the clavichord its just historical rights in this particular that he maintained the art-historical principle, that the compositions of the past, in order to be perfectly understood must be rendered on the instrument belonging to their respective period. Through this only can the player produce hidden effects, which in spite of all modern art of interpretation are simply impossible on modern instruments, if any one has not previously conceived its historical sound. In this respect the study of old instruments for the rendition of music of those days on our modern pianos assumes the same significance as etymology in the stndy of our mother tongue. The efforts of Mr. Steinert to reintroduce the study and the playing of the clavichord will doubtless bear manifold fruits. Prominent musicians and patrons of music have become enthusiastic adherents of this modest and at the same time soulful sounding instrument whose tone color permits such a rich shading. The efforts of Mr. Steinert belong to those rare impulses of the land of the dollar that come to us to serve only artistic interests in opposition to all material strife.

A LOST ART.

New Haven Evening Register, November 17th, 1892.

A LOST ART IN EUROPE.

MR. STEINERT, of this city, arrived home last evening from Europe. Mr. Steinert has been at the great musical exhibition at Vienna with his collection of rare old instruments, of which New Haveners have already heard. The collection aroused much interest among the musical authorities of Europe, and Mr. Steinert has returned home feeling more than rewarded for the great amount of time and money that he has spent upon his collection. The story of his work and success at the exhibition was told by Mr. Steinert this morning as follows:

"For five years I have been investigating and studying the art of playing the compositions of Sebastian Bach. At the time when Bach wrote, which was at the beginning of the 18th century, such an instrument as the pianoforte was not known. The pianoforte was invented in 1711 in Italy, but the invention was also made in 1716 in Germany and France. The various inventors in France and Germany were not aware of the fact that a pianoforte had been invented in Italy. The instruments were hardly accepted as a success by such composers as Bach and Scarlatti. The instruments used by these composers were the clavichord and harpsichord. After the death of Bach his compositions were more or less forgotten, and it was Mendelssohn who, about 50 years ago, brought Bach to notice again. The grandeur of the compositions of Bach were soon acknowledged by the musical profession all over the world, and societies were formed with the aim of collecting and publishing the compositions of Bach. They were, however, played upon the modern pianoforte as the old instruments were lost sight of.

I have been engaged in collecting in Europe and also in this country the instruments used during Bach's period. I was successful, and although the instruments were found in a deplorable state, being without strings and their resonant parts being almost destroyed, I went to work to repair them and put them into condition again. Then I went to work to study the manner of playing them. In this way the compositions of Bach were found to be of a nature entirely different from that when produced on the modern pianoforte. In order to acquaint the modern musical profession with the knowledge thus gained, I exhibited these instruments at different colleges and institutions of learning, and musical schools throughout the country, showing them at Yale, Harvard, Brown, Vassar and other institutions, and also in various theaters in the large cities of the east.

My work was, however, known in Europe, and when the great musical exhibition was opened in Vienna, I received a personal letter from the Princess Pauline von Metternich, the patroness of the exhibition, to take part in the exhibition and to bring part of my collection, that was at that time on loan at the Smithsonian Institute at Washington. As my interest was centered in playing the Bach compositions in the very manner practised by Bach himself, I went there to show the result of my work. In this I was very successful, although I was the only one there who could perform that peculiar style upon these peculiar instruments, and this art, being a lost art even in Europe, created a sensation among the scholars representing the musical art of Europe, such as Dr. Hans von Richter, Rubinstein, Sir George Grove of London, the royal family of Austria, the two brothers of the emperor taking special interest in my work. The Princess von Metternich spent an hour and a half listening to my playing. Prince Esterhazy and other nobilities of the German empire and other countries also honored me.

On invitation I delivered a lecture before the faculty of the Vienna conservatory of music, which is considered the highest musical school in the world to-day.

The fruit of my labors is shown by the fact that in that institution, for the first time in over a century, the clavichord and harpsichord are to be played, and the method of playing these instruments taught to the students. Other musical institutions in Europe, such as in Berlin, Leipsic, London, Paris, St. Petersburgh and Moscow, have also begun to interest themselves in this old art. Thus a renaissance of the Bach school of playing the clavier has been begun."

Mr. Steinert has been honored by all those who heard him play, and has received the most flattering letters from the nobility and musical authoirties of Europe. Many musical journals and publications are now investigating Mr. Steinert's theories of the lost art of the Bach school and are agitating the subject, and America, not to be behind, recently sent to Vienna a commissioner of the World's fair to ask Mr. Steinert to send his collection to Chicago. The secretary of the department of liberal arts of the exhibition is now on his way east, and will arrive here in a few days to make arrangements for the exhibit of Mr. Steinert's collection.

HISTORY OF THE VIOLIN.

THE HISTORY OF THE VIOLIN

AND

OTHER STRINGED INSTRUMENTS.

THE crwth, retaining the shape of the small Roman lyre, forms an obvious link between the instruments of antiquity and modern times. The time of the use of the bow in connection with musical instruments, is unknown. Before the 13th century there existed various modifications of stringed instruments which were either plucked with the fingers or set in vibration by means of the bow and were called "fiddle, crwth, Rotte-Geige (Gigue Jig) and Rebec." In the beginning of the 13th century in connection with the advent of the Troubadours and their remarkable influence on literature and music a new instrument appeared in the south of Europe. It was called "Viole" or "Vielle" and also Guitar fiddle. The Guitar fiddle was used to accompany the voice, it was larger than its predecessors, its increased size being due to the addition of a waist whereby the bow was enabled to reach the strings. In fact it was a combination of the guitar, hurdy-gurdy and viole in one; being either plucked with the fingers, the guitar; played with the bow, viole; or set in motion by a wheel, the hurdy-gurdy. The viole was also employed to accompany the voice and through the development of choral singing violes of different pitches and sizes were introduced.

In the 15th century instruments were made to correspond in size to the pitch of the human voice. In order to give these

instruments greater strength to resist the increased tension of the strings corner blocks were used. This innovation was contemporary with the great development of polyphonic choral music in Germany and the Netherlands during the 15th century and by the beginning of the 16th century the treble or discant viole, the tenor, the bass viol and double bass or violone were well established in both these countries and north Italy. The violin model, which differs from the viole in having shallower sides, with an arched instead of a flat back and square shoulders and in being constructed in all its parts of curved or arched pieces of wood glued together in a state of tension on the blocks, first appeared in Italy during the middle of the 16th century. This instrument completely revolutionized the art of fiddle making, driving out of use first the Discant Viol, then the Tenor and last of all the Bass Viol. The Double Bass, which is a Viol pure and simple, alone has resisted the inroads of the Violin model and has only been changed in relation to the sound holes. The substitution of the violin for the viol, except as hereinbefore mentioned, is due to its louder tone and conforms with the history of musical instruments, which may be stated in the words "the survival of the loudest." As the vibrations of the viols were insufficient to meet the growing demand for power, in order to increase their power they were constructed with double strings tuned in fifths and octaves and also with sympathetic metal strings, and thus constituting the family of the Viola d'Amore and Barytone. The viol family had four, five and sometimes six strings, which were tuned by fourths, a single major third being interpolated in the five and six stringed instruments in order to preserve the same tonality in the upper notes, being the same system of stringing as practised on the lute. This system of tuning has been proved to have been in vogue as early as 1542 by a treatise published that year in Venice, and agreed with the parts of contemporary vocal music, especially as the music written for viols is always within the compass of the human voice. There are compositions dating back to 1539 which

may be either sung or played on the viol. For this reason also very little is heard at that time about the double bass. This instrument merely served as a sub-bass in octaves to the voice or bass viol. This trio of viols, tuned as prescribed by the "Regola Rubertina" of 1542, remained unaltered in use for a century and a half as the basis of chamber music.

The viols with sympathetic metal strings received the name d'Amore, not in order to express their special aptitute for expressing amorous accents, but on account of the sympathetic vibrations of the open metal strings stretched over the belly in unison with those on the finger-board. They were in use in Italy and Germany in the 17th and 18th centuries. These instruments are invariably made with flaming sword sound holes, and often have a rose under the finger-board. The sympathetic strings of fine brass or steel wire are attached by loops at the bottom block above the tail pin, are then carried through small holes drilled in the lower part of the bridge under the finger-board, which is hollowed for that purpose over an ivory nut immediately below the upper nut into the peg. The sympathetic apparatus was of two species, the diatonic consisting of 6 or 7 strings, and the chromatic consisting of 12 or more strings. In the former the strings were tuned to the diatonic scale, the lowest note being generally D, the intervals being adapted to flattening or sharpening to the key of the piece being performed. This, however, was not necessary for the chromatic species, there being twelve strings, one for each semitone in the scale and thus furnishing a sympathetic augmentation to every note played. In the time of Bach and Vivaldi it was tuned by fourths and a third like the tenor viol. In imitation of the Viola de Gamba a seventh string was added in the beginning of the last century, and ultimately the so-called "Harp way" tuning of the Lute and Viola de Gamba was generally adopted. The latter tuning is used in the well-known obligato part in Meyerbeer's "Huguenots." The Viola d'Amore is a singularly beautiful instrument, but the inherent difficulties of execution are

not easily overcome, and as every forte note produces a perfect shower of concords and harmonics, all notes which will not bear a major third must be very lightly touched. The Viola de Gamba with sympathetic strings was first called the Viola Bastarda, but after undergoing many mechanical improvements in its sympathetic apparatus, it became the well-known Barytone, the favorite instrument of the musical epicures of the last century. Leopold Mozart, father of the great Mozart, considered it one of the loveliest of instruments. Haydn made it his favorite instrument and composed not less than 175 pieces for it.

It may be well to repeat here that the Viol family consists of the following instruments: the Treble or discant, Tenor Viola de Braccio, Bass called the Viola de Gamba, and Double Bass called the Violone. The viola has a flat back sloping off at the top, and is strengthened internally by cross bars and a broad centre piece on which the sound post rests. The shoulders curve upwards, joining the neck at a tangent instead of at right angles as in the violin. The neck is broad and thin and the number of strings five, six or even seven. The peg is usually surmounted by a curved head. The sound holes are usually of the C pattern. Unlike the Violin it was tuned by fourths and thirds. Its tone is rather penetrating than powerful.

The Viola de Gamba, or Knee Violin, as distinguished from the Viola de Braccio, to be played on the arm, is held between the knees, is the predecessor of the violoncello. It is about the same size as the latter, but has a flat back like the double bass. The openings in the belly are not S shaped, but are variously cut, generally representing a thin crescent. Originally the finger-board was provided with frets, but this was afterwards discontinued. The Viola de Gamba was for a long time the most popular of all bowed instruments in Holland and Germany, and especially in England. Shakespeare, in his "Twelfth Night," mentions as a special accomplishment of Sir Andrew Aguecheck "he plays o' the viol de gamboys." In the pictures of Gerard Dow Terburg

and other great Dutch masters of the 17th century, we repeatedly behold richly dressed ladies and gentlemen playing the Gamba. In fact at one time there were only few noblemen's or gentlemen's houses without a "chest" containing a set of four or more gambas of different sizes, of rich make, carved and inlaid with ivory or tortoise shell. This popularity of the Gamba extended to the middle of the 18th century, when the Violoncello gradually began to supersede it. The Gamba was played very much like the 'Cello. Sebastian Bach was the last great composer who wrote for the Gamba, and he seems to have had a special predilection for it. There are still extant three of his sonatas for Clavier and Gamba, and a number of obligato accompaniments for airs in his cantatas and the Passion music. He also composed a Concerto grosso for two viols de Braccio, two viols de Gamba, Violoncello, Violone and Harpsichord, and on other occasions he used that instrument for attaining special orchestral effects. In the beautiful introduction to the cantata "Gottes Zeit" we find three different gamba parts combined with violins and flute, which must have produced a very peculiar effect. In vain, however, we look for the gamba in Handel's scores. C. F. Abel, (who died in 1787) a pupil of Bach, and Lidi, an Englishman, (who died in 1789) were the last well-known virtuosi on the Gamba.

The Viola de Spalla, or shoulder Viol, was a small bass, which could be fastened with a ribbon round the neck, and after playing could be thrown back upon the shoulder. This instrument was probably a 'cello used by wandering musicians and was carried by them by means of a leather strap over the shoulder. The English Violet resembled in construction and tone the Viola d'Amore.

The Pochette, or Pocket Violin, was carried by dancing masters in their pockets, hence its French name; it was also termed the "Kit" and was usually 16 inches long. The Viola Pomposa, a small violoncello with an additional treble string, was invented by Sebastian Bach and is probably identical with the "Violoncello piccolo" of his scores. The sixth of his solos for the violoncello

was written for this instrument. This family of viols has become extinct at the present time, and their place has been usurped by our favorite string quartett, the violin, the viola, the violoncello and the contrabass. The violin, whose difference of construction from the viol family has been hereinbefore described, first appeared in Italy in the middle of the 16th century. It completely revolutionized the art of fiddle making, first causing the disappearance of the Discant Viol, then the Tenore, and last of all the Bass Viol. The Double Bass alone survives. The substitution of the violin for the viol is due, as formerly stated, to its louder tone. The violin model was finally adopted for the tenor and bass during the last century. Since Stradivari, (1680–1730) the models for bowed instruments have scarcely changed at all to the present date.

The violin is now about 300 years in existence. It is the only musical instrument that has remained unchanged throughout the modern musical history. The lute, the universal companion of bowed instruments up to a century and a half ago, has disappeared as completely as the spinet and harpsichord. Wind instruments have been completely revolutionized, but the violin has remained the same for three hundred years, and will probably remain so while music exists. Numberless attempts have been made to improve it, but they all have been abandoned. Almost every structural alteration that could be thought of has been tried at some time and dismissed. The whole design of the fiddle has been gradually settled in strict accordance with the requirements of tone and execution. The development of this instrument at once so simple and complex can be easily traced. Its primitive forms can be beheld in early monuments. Old stringed instruments have gradually died hard, and very primitive ones have maintained their place alongside of improved ones founded on their principle. Thus the Marine Trumpet, one of the oldest bowed instruments, and representing the earliest development of the monochord, continued in use for a long time concurrently

with more advanced instruments, and even to-day is not quite obsolete.

The Guitar shaped violin, which is a direct descendant of the Fiddle of the Troubadours, has been made and used in all ages. Likewise, the Rebec for a long time continued in use side by side with the violin. The Viola de Gamba has never been completely forced out of existence by the Violoncello. But the most singular survival of all is the Welsch crwth, which is simply the small lyre as introduced by the Romans into Celtic Britain, adopted with some slight modifications for use as a bowed instrument. The adoption of four strings tuned by fifths for the violin in its three sizes, marks the emancipation of bowed instruments from the domination of the lute. Thereby such impediments to progress as complicated and various tunings, frets and tablature music were removed. This change in very many respects facilitated musical progress. Naturally the diminished number of strings increased the resonance of the instrument, as with six strings there is an excessive pressure on the bridge, which checks vibration and increases the resistance to the bow. By the change the fingering was simplified, although in the larger instruments it was rendered more laborious to the player.

It cannot be maintained, however, that music lost nothing by the abandonment of the viol. The violin offers fewer facilities for harmonic combinations and suspensions in the form of chords and arpeggios. Bowed instruments tended more and more to become merely melodic, like wind instruments. By increasing the length of the scale, effect was sought to be produced, and the higher and less agreeable notes, which would have shocked the ears of our fore-fathers, were more frequently employed. In fact, it is often supposed that the earlier violinists were not sufficiently masters of the instrument to command the higher positions. Nothing can be more absurd. Many compositions for the Viola de Gamba prove that very complicated music was played on that instrument across the strings in the higher positions, and the

transferring of this method of execution to the violin obviously rested with individual players and composers. Bach's violin solos are written for a performer of transcendent genius, although Bach with unfailing good taste without exception confines the player to the lower registers of the instrument.

At first no sufficient cause is obvious for the concentration of fiddle-making at Cremona. It may have started from the reason that in the 16th century Cremona was a famous musical centre. The district surrounding it was one of the richest in agriculture in all Lombardy, and was chiefly under the control of the monasteries of the city and neighborhood. These wealthy institutions vied with each other in the splendor of their churches and daily services, and thereby furnished constant employment to painters, composers and instrument makers. The renown of Cremona as a school of music and painting was equal to that of Bologna, but its chief rival in fiddle-making was Brescia, where Caspar di Salo, the two Zanettos, Giovita Rodiani and Maggini made instruments from about 1580 to 1640. The characteristics of these makers, who compose the so-called Brescian School, can be found in the instruments of Andreas Amati, the earliest known violin maker of Cremona. The expression "the Brescian School" is somewhat misleading, it would be more correct to term their instruments as "Early Italian." The reputation of the Cremona Violins is mainly due to the sons of Andreas Amati, namely Antonio and Girolamo Amati, contemporaries of Maggini. Previous to this time, the violin had been treated as a work of art and as a tone-producing instrument, but artistic impulses had produced only superficial decorations in the shape of painting or inlaying with wood, etc. The brothers Amati, however, closely obeying the fundamental law of art manufacture, to wit, that deviation should be founded on construction, reduced the outlines and surfaces of the instrument to regular and harmonious curves, and by applying a certain varnish developed and deepened the natural beauty of the material. But while beautifying the exterior, they did not neglect

the mechanical conditions of sonority, which is in reality the soul of the work. Their wood is of prime quality, and the disposition of the thicknesses, blocks and linings leaves little room for improvement. Their successors, Nicholas Amati, Stradivari and Joseph Guarnieri augmented the tone of the instrument. Nicholas Amati, the son of Hieronymus, (1596–1684) was the most celebrated maker of the family. During his long life he perhaps varied least from his own standard than any other maker. After his death his pupil, Antonio Stradivari, raised the Cremona Violin to its utmost perfection, (1699–1737.) He was succeeded by Albani Amati, Gagliano Grancino Guadaguini, Guarnieri, Laudolfi, Serafin. The pupils and imitators of Stradivari maintained the reputation of the Italian violins during the first half of the last century; after 1760, however, a great decline can be perceived in Italian violin making, although good instruments were made by various second rate makers of the latter part of the century. The violin makers of South Germany form a distinct school, Klotz and Stainer may be named as the most celebrated of them; Munich, Vienna, Salzburg and Nuremberg have produced many fine violin makers. In France, the following makers deserve special mention: Lupot and Vuillaume, Aldric, G. Chanot the elder, Silvestre, Marrcotel, Minnegand, Henry and Rambaux. In England, the oldest school contains the names of Urguhart and Pamphilon. While at the beginning of the century we find in all parts of Europe distinguished violin makers imitating the old Italian School, the United States of America cannot point to a single eminent maker. The reason for this can be found in its state of musical culture. While the study of the piano attracted universal attention, orchestral music was still dormant, orchestral instruments were sadly neglected, and consequently little attention was given to the study of the violin. Through the concert tours of such eminent violinists as Sivori, Ole Bull and Vieuxtemps, a great interest in violin playing was awakened, and although many instruments of inferior make were thus imported to this country,

soon a demand arose for instruments of sterling merit. By the advise of Ole Bull, George Gemuender, a skillful violin maker employed by the celebrated Vuillaume at Paris, came to this country in 1847. He established himself in business at New York, and by strictly adhering to the old Italian School he has attained a national reputation. His instruments not only in form and varnish and general workmanship closely resemble the Cremona violins, but in quality and intonation fairly equal them, and it can be safely said that to-day George Gemuender cannot be surpassed by any violin maker in Europe.

CATALOGUE OF

STRINGED INSTRUMENTS.

THE viol is the typical representative of a very large, varied and widely distributed class of instruments, of which in modern music the violin is the chief member. The viol of the fifteenth century was characterized by a flat back, in having generally crescent-shaped sound-holes in the belly, and a broad, thin neck, forming a close amalgamation of the neck with the body. It had from five to seven strings, tuned in fourths and one-third. The viol was made in several sizes. The smallest, called the treble or discant viol, passed over later into the modern violin; the next larger, the tenor, into the viola da braccio and viola d'amore and the modern viola; the next, bass, into the viola da gamba and the violoncello; and the largest, double-bass, into the violone and the modern double-bass. The viola da braccio, or arm-viol, is so called to distinguish it from the bass viol or viola da gamba, the leg-viola. The viola da braccio had six strings, and was tuned thus: G, D, A, F, C and G (the second below middle C). The viola da gamba had properly six strings, tuned thus: D, A, E, C, G and D. The viola d'amore used in the seventeenth and eighteenth centuries, having usually seven ordinary gut strings with from seven to fourteen supplementary strings of metal under the fingerboard which sound sympathetically. The gut strings were usually tuned thus: D, A, F sharp, D, A, F sharp, D (next below middle C). The sympathetic strings, if few, were tuned diatonically in the scale of D, or if many, chromatically. The viola d'amore was an arm-viola. The viola pomposa, a species of viola da gamba invented by Joh. Seb. Bach, having five strings

tuned thus: E, A, D, G, C (the second below middle C); some had also six strings. The viola da spalla was the same as the viola da gamba. Arpeggione or guitar violoncello, a stringed instrument played with a bow, which was invented by G. Staufer of Vienna in 1823. It is of the size of the viola da gamba, the shape of the body something like that of the guitar. The finger board has frets, and it has six strings. Schubert's interesting Sonata in A, for piano and arpeggione, written in 1824, was composed for this instrument.

No. 48. Discant Viola da Gamba, five strings, ivory inlaid fingerboard and tailpiece, carved head. *(Now strung with only four strings.)*

No. 49. Viola da Gamba, six strings, carved head, made by Barak Norman, an English maker, 1688—1740.

No. 50. Viola da Gamba, six strings, carved head, of German make.

No. 51. Viola da Gamba, carved head, of Italian make.

No. 52. Viola da Gamba, of Italian make.

No. 53. Viola da Gamba.

No. 54. Viola da Spalla, carved head, of Italian make.

No. 55. Viola Pomposa, six strings, French make.

No. 56. Violoncello Piccolo, carved head.

No. 57. Arpeggione or Guitar Violoncello, six strings, Bohemian make.

No. 58. Viola d'Amore, carved head, fourteen strings, German make.

No. 59. Viola d'Amore, carved head, fourteen strings, German make.

No. 60. Viola d'Amore, carved head, fourteen strings, Bohemian make.

No. 61. Viola da Braccio, German make.

No. 62. Viola da Braccio, German make.

No. 63. Viola, Stainer.

No. 64. Violo, Italian make.

No. 65. Viola, with carved head, Italian make.

No. 66. Viola, Amati.

No. 67. Violoncello, with carved head, old German make.

No. 68. Violoncello, William Forster.

No. 69. Violoncello, Amati.

No. 70. Violoncello, Italian make.

No. 71. Violin, Maggini.

No. 72. Violin, Serafin.

No. 73. Violin, German make.

No. 74. Violin, German make.

No. 75. Violin, Scheinlein.

No. 76. Violin, Mathias Thirr.

No. 77. Violin, German make.

No. 78, 79, 80, 81. String quartet, consisting of two Violins, Viola and Violoncello, made by George Gemünder, New York.

No. 82. Spanish Guitar (Vihuela), with double metal strings, built during the 16th century.